

**DEVELOPMENT OF REGIONAL IMPACT
(DRI #2520)**

**TRAFFIC STUDY
FOR
RIDGEWALK CENTER MIXED-USE DEVELOPMENT
WOODSTOCK, GEORGIA**

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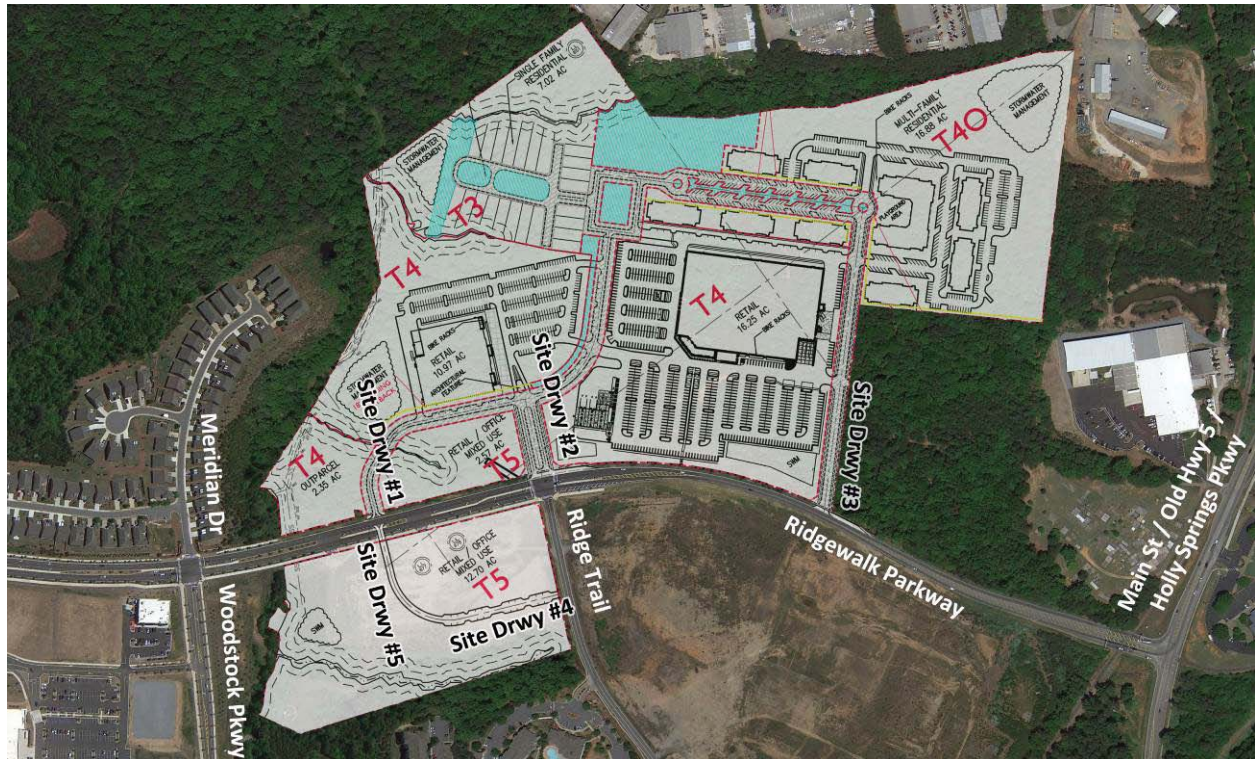
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EXECUTIVE SUMMARY

Traffic impacts were evaluated for the added traffic from the proposed Ridgewalk Center mixed-use development located along the north and south sides of Ridgewalk Parkway, to the east of the Woodstock Parkway / Meridian Drive intersection in Woodstock, Georgia.



SITE INFORMATION		
	Northern Tract	Southern Tract
Land Use Density	- Retail Space: 260,772 sf - Fuel Center: 18 positions - Office Space: 5,000 sf - Single-Family Detached Housing: 23 lots - Apartment: 320 units	- Retail Space: 70,000 sf - Office Space: 30,000 sf
Site Access Locations	<u>Site Driveway #1</u>: Right-in / Right-out on Ridgewalk Parkway, west of Ridge Trail <u>Site Driveway #2</u>: Full-access on Ridgewalk, aligned with existing signal at Ridge Trail <u>Site Driveway #3</u>: Right-in / Right-out on Ridgewalk Pkwy, east of Ridge Trail	<u>Site Driveway #4</u>: Full-access on Ridge Trail, south of Ridgewalk Pkwy <u>Site Driveway #5</u>: Right-in / Right-out on Ridgewalk Pkwy, west of Ridge Trail

The analysis included the evaluation of Future operations for “No-Build” and “Build” conditions, both of which account for increases in annual growth of through traffic. The resulting recommendations are as follows:

System Recommendations and Improvements

Improvements that are identified as “System Improvements” address deficiencies that are found within the existing road network prior to any impacts from the proposed development’s added traffic. These are recommended for consideration in future local / state transportation planning.

- Ridgewalk Pkwy @ I-575 SB Ramps – Add a protected / permissive signal phase to westbound left movement

Site Access Configuration

The following access configuration was utilized when modeling the proposed site driveway intersections.

- Site Driveway #1, #3, and #5: Right-in / Right-out on Ridgewalk Parkway
 - This driveway will consist of one entering lane and one exiting lane.
 - The intersection will be unsignalized with a YIELD sign on the driveway
 - A deceleration lane will be constructed for entering right turn movements based on local standards (See Appendix).
 - Left turns will be prohibited by a raised median on Ridgewalk Parkway.
- Site Driveway #2: signalized full access driveway on Ridgewalk Parkway
 - This driveway will consist of two entering and three exiting lanes. The southbound (exiting) approach will have a dual left turn lanes and shared through / right turn lane.
 - An additional dedicated eastbound left turn bay will be constructed for entering traffic, creating dual left turn lanes.
 - A deceleration lane will be constructed for entering right turn movements traffic based on local standards (See Appendix).
- Site Driveway #4: full access driveway on Ridge Trail
 - This driveway will consist of one entering lane and one exiting lane.
 - The intersection will be unsignalized with a STOP sign on the eastbound approach.
 - Entering left turn movements will be made from the northbound through lane. No dedicated turn bay is planned.
 - Entering right turn movements will be made from the southbound through lane. No deceleration lane is planned.

Site Mitigation Improvements

Improvements that are identified as “Site Mitigation Improvements” address further impacts that are a result of the proposed development’s added traffic. *Please note that survey and construction drawings may be needed to verify the feasibility and extent of additional right-of-way required for any recommended improvements.* Concept drawings are provided in Section 6.2.2.

- Ridgewalk Pkwy @ I-575 SB Ramps – Add eastbound right turn lane
- Ridgewalk Pkwy @ Ridge Trail – Add a northbound left turn lane and protected / permissive signal phase
- Ridgewalk Pkwy @ Outlet Shoppes – Add northbound left turn phase to the signal
- Ridgewalk Pkwy @ Outlets Shoppes – Remove right turn from shared eastbound through/right lane

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1. INTRODUCTION

The purpose of this study is to determine the traffic impact that will result from the proposed Ridgewalk Center mixed-use development located along the north and south sides of Ridgewalk Parkway to the east of Woodstock Parkway / Meridian Drive in Woodstock, Georgia. The traffic analysis evaluates the current operations compared to the future conditions with the traffic generated by the development.



Northern Tract Land Uses

- Retail Space: 260,772 sf
- Fuel Center: 18 positions
- Office Space: 5,000 sf
- Single-Family Detached Housing: 23 lots
- Apartment: 320 units

Southern Tract Land Uses

- Retail Space: 70,000 sf
- Office Space: 30,000 sf

Site Access Locations

- Site Driveway #1: right-in / right-out driveway on the west side of the north tract's frontage along Ridgewalk Parkway
- Site Driveway #2: full access driveway on Ridgewalk Parkway that aligns with the signal at Ridge Trail
- Site Driveway #3: right-in / right-out driveway on the east side of the north tract's frontage along Ridgewalk Parkway
- Site Driveway #4: full access driveway on Ridge Trail, just south of the intersection at Ridgewalk Parkway
- Site Driveway #5: right-in / right-out driveway on the east side of the south tract's frontage along Ridgewalk Parkway (across from site driveway #1)

The AM, PM and Saturday peak hours have been analyzed in this study. In addition to the site access points, this study includes the evaluation of traffic operations at the intersections of:

1. Ridgewalk Parkway at I-575 Southbound Ramps
2. Ridgewalk Parkway at I-575 Northbound Ramps
3. Ridgewalk Parkway at Old Rope Mill Park Road / Outlet Shoppes Driveway
4. Ridgewalk Parkway at Woodstock Parkway / Meridian Drive
5. Ridgewalk Parkway at Ridge Trail
6. Main Street at E. Cherokee Drive / Publix Driveway
7. Main Street at Rope Mill Rd / E. Main Street
8. Woodstock Parkway at Rope Mill Road / Outlet Shoppes Driveway
9. Ridgewalk Parkway at Main Street

Recommendations to improve traffic operations have been identified as appropriate and are discussed in detail in the following sections of the report.

2. STUDY NETWORK DETERMINATION

The study network was determined by evaluating the amount of traffic that the proposed development will add to each roadway segment in the area. According to GRTA requirements, a roadway segment carries a “significant” amount of traffic if the project contributes 7% or more trips to the two-way daily service volumes of the roadway at the appropriate level of service standard. Upon agreement with GRTA a level of service standard of “D” was used for determining the study area network.

The traffic generated by the proposed project was then assigned to the area roadways using the trip distribution to determine the site-generated traffic on each roadway segment. The boundaries of the study network extend to the most distant intersections where at least 7% of the service volumes on the segment are attributed to project traffic. The following study intersections fell within the 7% rule and/or have been selected as being suitable for evaluation in discussions with GRTA, GDOT and the City of Woodstock:

1. Ridgewalk Parkway at I-575 Southbound Ramps
2. Ridgewalk Parkway at I-575 Northbound Ramps
3. Ridgewalk Parkway at Old Rope Mill Park Road / Outlet Shoppes Driveway
4. Ridgewalk Parkway at Woodstock Parkway / Meridian Drive
5. Ridgewalk Parkway at Ridge Trail
6. Main Street at E. Cherokee Drive / Publix Driveway
7. Main Street at Rope Mill Rd / E. Main Street
8. Woodstock Parkway at Rope Mill Road / Outlet Shoppes Driveway
9. Ridgewalk Parkway at Main Street

The location of the development and the surrounding study network is shown in Figure 1. Other intersections within this corridor, such as unsignalized side streets, right-in / right-out driveways or private driveways have not been included in the study network.

2.1 Existing Roadway Facilities

The following is a brief description of each of the roadway facilities located in proximity to the site:

I-575 Interstate

I-575 is a north-south, six-lane, divided roadway with a posted speed limit of 65 mph in the vicinity of the site. GDOT traffic counts (Station ID 0570239 & 0570240) indicate that the daily traffic volume on I-575 is 82,200 vehicles per day south of Ridgewalk Parkway and 71,280 vehicles per day north of Ridgewalk Parkway.

Ridgewalk Parkway

Ridgewalk Parkway is an east-west, four-lane, median-divided roadway with a posted speed limit of 35 mph in the vicinity of the site. A 24-hour directional count measured the daily traffic volume to be 15,277 vehicles per day, between Ridge Trail and Main Street. Ridgewalk Parkway is designated as a local roadway in the ARC Functional Classification Review Maps.

Old Rope Mill Park Road

Old Rope Mill Park Road is a north-south, two-lane roadway with a posted speed limit of 35 mph in the vicinity of the site. Old Rope Mill Park Road is designated as a local roadway in the ARC Functional Classification Review Maps.

Rope Mill Road

Rope Mill Road is an east-west, two-lane roadway with a posted speed limit of 30 mph in the vicinity of the site. GDOT traffic counts (Station ID 0578049) indicate that the daily traffic volume on Rope Mill Road is 900 vehicles per day north of Cardinal Drive. Rope Mill Road is designated as a local roadway in the ARC Functional Classification Review Maps.

Woodstock Parkway

Woodstock Parkway is a north-south, two-lane roadway with a posted speed limit of 25 mph in the vicinity of the site. Woodstock Parkway is designated as a local roadway in the ARC Functional Classification Review Maps.

Meridian Drive

Meridian Drive is a north-south, two-lane residential driveway with a posted speed limit of 25 mph. Meridian Drive is designated as a local roadway in the ARC Functional Classification Review Maps.

Ridge Trail

Ridge Trail is a north-south, two-lane residential driveway with a posted speed limit of 30 mph in the vicinity of the site. Ridge Trail is designated as a local roadway in the ARC Functional Classification Review Maps.

Main Street

Main Street is a north-south, two-lane roadway. It has a 45 mph posted speed limit north of Ridgewalk Parkway, a 35 mph posted speed limit south of Ridgewalk Parkway, and 25 mph south of Rope Mill Road. GDOT traffic counts (Station ID 0570010) indicate that the daily traffic volume on Main Street is 15,000 vehicles per day north of Ridgewalk Parkway. Main Street is designated as a minor arterial and part of the Regional Thoroughfares Network in the ARC Functional Classification Review Maps.

E. Main Street

E. Main Street is an east-west, two-lane roadway no posted speed. E. Main Street is designated as a local roadway in the ARC Functional Classification Review Maps.

E. Cherokee Drive

E. Cherokee Drive is an east-west, two-lane roadway with a posted speed limit of 45 mph in the vicinity of the site. GDOT traffic counts (Station ID 0570165) indicate that the daily traffic volume on E. Cherokee Drive is 9,210 vehicles per day east of Tripp Road. E. Cherokee Drive is designated as a minor arterial in

the ARC Functional Classification Review Maps. Cherokee County is planning to improve the intersection of E. Cherokee Drive at Main Street /Holly Springs Parkway by the project build year.

2.2 Existing Bicycle and Pedestrian Facilities

The following is a brief description of each of the bicycle and pedestrian facilities located in proximity to the site:

Nearby local or regional trails

The City of Woodstock Greenprints trail is located adjacent to the site on Ridgewalk Parkway.



Bicycle paths or sidewalks

Sidewalks and pedestrian facilities are present along the following roadways in the study network:

- Ridgewalk Parkway: 10' wide path on the south side of the road
- Old Rope Mill Road: Sidewalk on both sides of the roadway
- Woodstock Pkwy: Sidewalk on both sides of the roadway from Ridgewalk Pkwy to Rope Mill Rd
- Meridian Drive: Sidewalk on one or both sides of the roadway through-out the neighborhood
- Ridge Trail: Sidewalk on one or both sides of the roadway through-out the neighborhood
- Main Street: 10' wide trail south of Ridgewalk Pkwy to Haney Rd ; sidewalk on one side south of Haney Road into downtown Woodstock ; sidewalk on east side between Ridgewalk Pkwy and Johnson Farm Ln ; no sidewalk between Johnson Farm Ln and E Cherokee Drive (sidewalk will be constructed on both sides for the extent of the planned County improvement project)
- E Cherokee Drive: no sidewalk on E Cherokee Drive (sidewalk will be constructed on both sides for the extent of the planned County improvement project)

There are no dedicated bicycle facilities in the study area.

2.3 Existing Transit Facilities

There is no public transit service near the site.

LEGEND

○ - Study Intersection



LOCATION MAP AND STUDY INTERSECTIONS

FIGURE 1

3. STUDY METHODOLOGY

In this study, the methodology used for evaluating traffic operations at each of the subject intersections is based on the criteria set forth in the Transportation Research Board's Highway Capacity Manual, 2000 edition (HCM 2000). Synchro software, which utilizes the HCM 2000 methodology, was used for the analysis. The following is a description of the methodology employed for the analysis of unsignalized and signalized intersections.

3.1 Unsignalized Intersections

For unsignalized intersections at which the side street or minor street is controlled by a stop sign, the criteria for evaluating traffic operations are the level-of-service (LOS) for the turning movements at the intersection and the level-of-service for the overall intersection. Level-of-service is based on the average controlled delay incurred at the intersection. Controlled delay for unsignalized intersections includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Several factors affect the controlled delay for unsignalized intersections, such as the availability and distribution of gaps in the conflicting traffic stream, critical gaps, and follow-up time for a vehicle in the queue.

Level-of-service is assigned a letter designation from "A" through "F". Level-of-service "A" indicates excellent operations with little delay to motorists, while level-of-service "F" exists when there are insufficient gaps of acceptable size to allow vehicles on the side street to cross safely, resulting in extremely long total delays and long queues. The level-of-service criteria for two-way stop-controlled and all-way stop-controlled (unsignalized) intersections are given in Table 1.

TABLE 1 — LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS	
Level-of-service	Average Delay (sec)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Source: 2000 Highway Capacity Manual

3.2 Signalized Intersections

For signalized intersections, it is necessary to evaluate both capacity and level-of-service in order to evaluate the overall operation of the intersection. The capacity analysis of an intersection is performed by comparing the volume of traffic using the various lane groups at the intersection to the capacity of those lane groups. This results in a volume/capacity (v/c) ratio for each lane group. A v/c ratio greater than 1.0 indicates that the volume of traffic has exceeded the capacity available, resulting in a temporary excess of demand. Although the capacity of the entire intersection is not defined, a composite v/c ratio for the sum of the critical lane groups within the intersection is computed. This composite v/c ratio is an indication of the overall intersection sufficiency.

Level-of-service for a signalized intersection is defined in terms of average controlled delay per vehicle, which is composed of initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The level-of-service criteria for signalized intersections, based on average controlled delay, are shown in Table 2. Level-of-service “A” indicates operations with very low controlled delay, while level-of-service “F” describes operations with extremely high average controlled delay. Level-of-service “E” is typically considered to be the limit of acceptable delay, and level-of-service “F” is considered unacceptable by most drivers.

TABLE 2 — LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS	
Level-of-service	Average Control Delay (sec)
A	≤ 10
B	$> 10 \text{ and } \leq 20$
C	$> 20 \text{ and } \leq 35$
D	$> 35 \text{ and } \leq 55$
E	$> 55 \text{ and } \leq 80$
F	> 80

Source: 2000 Highway Capacity Manual

4. EXISTING TRAFFIC ANALYSIS

Existing traffic counts and intersection geometric data were obtained at the following study intersections:

1. Ridgewalk Parkway at I-575 Southbound Ramps
2. Ridgewalk Parkway at I-575 Northbound Ramps
3. Ridgewalk Parkway at Old Rope Mill Park Road / Outlet Shoppes Driveway
4. Ridgewalk Parkway at Woodstock Parkway / Meridian Drive
5. Ridgewalk Parkway at Ridge Trail
6. Main Street at E. Cherokee Drive / Publix Driveway
7. Main Street at Rope Mill Rd / E. Main Street
8. Woodstock Parkway at Rope Mill Road / Outlet Shoppes Driveway
9. Ridgewalk Parkway at Main Street

Turning movement counts were collected on Tuesday, November 17, 2015 and Saturday, November 21, 2015. All weekday turning movement counts were recorded during the AM and PM peak periods, between 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., respectively. All weekend turning movement counts were recorded during the Saturday peak period between 12:00 p.m. and 2:00 p.m. The four consecutive 15-minute interval volumes that summed to produce the highest volume at the intersections were then determined. These volumes make up the peak hour traffic volumes for the intersections counted and are shown in Figure 2. Note that weekday counts for the intersection of Woodstock Parkway at Rope Mill Road / Outlet Shoppes Driveway were collected during the week of Thanksgiving and seasonally adjusted from other nearby intersections (see Appendix for details).

4.1 Existing Traffic Operations

Existing traffic operations were analyzed at the study intersections in accordance with the HCM methodology. The local level-of-service (LOS) standard is “D” or better. If the existing LOS for the segment or intersection is “E” or “F”, then the future “No-Build” and future “Build” LOS standard will be LOS “E”, consistent with the GRTA Letter of Understanding. The results of the delay and queuing analyses are shown in Tables 3 and 4. The existing traffic control and lane geometry for the intersections are shown in Figure 3.

TABLE 3 — EXISTING INTERSECTION OPERATIONS

	Intersection	Traffic Control	AM Peak	PM Peak	SAT Peak	LOS Standard
			LOS (Delay)	LOS (Delay)	LOS (Delay)	AM/PM/SAT
1	<u>Ridgewalk Pkwy @ I-575 SB Ramps</u> -Eastbound Approach -Westbound Approach -Southbound Approach	Signalized	<u>C (30.7)</u> A (10.0) C (34.1) D (44.3)	<u>C (21.6)</u> A (6.4) C (21.3) C (33.1)	<u>D (39.6)</u> A (8.3) D (50.7) D (37.2)	<u>D / D / D</u> - - -
2	<u>Ridgewalk Pkwy @ I-575 NB Ramps</u> -Eastbound Approach -Westbound Approach -Northbound Approach	Signalized	<u>A (2.1)</u> A (1.2) A (1.5) A (4.4)	<u>A (5.8)</u> A (3.0) A (5.5) A (7.7)	<u>A (3.9)</u> A (1.0) A (4.5) A (4.4)	<u>D / D / D</u> - - -
3	<u>Ridgewalk Pkwy @ Old Rope Mill Park Rd/ Outlet Shoppes Drwy</u> -Eastbound Approach -Westbound Approach -Northbound Approach -Southbound Approach	Signalized	<u>B (10.3)</u> A (4.9) A (5.9) D (37.8) C (29.1)	<u>C (24.6)</u> B (12.9) B (16.4) E (70.9) C (20.9)	<u>D (39.1)</u> C (22.1) B (20.0) F (91.9) B (15.9)	<u>D / D / D</u> - - - -
4	<u>Ridgewalk Pkwy @ Woodstock Pkwy / Meridian Dr</u> -Eastbound Approach -Westbound Approach -Northbound Approach -Southbound Approach	Signalized	<u>A (9.3)</u> A (5.0) A (5.7) C (29.8) C (27.8)	<u>A (8.5)</u> A (2.7) A (3.3) C (32.9) C (29.4)	<u>A (6.6)</u> A (3.3) A (2.8) C (34.3) C (33.3)	<u>D / D / D</u> - - - -
5	<u>Ridgewalk Pkwy @ Ridge Tr</u> -Eastbound Approach -Westbound Approach -Northbound Approach	Signalized	<u>B (13.5)</u> A (6.8) A (8.4) C (34.5)	<u>A (9.7)</u> A (6.2) A (7.2) D (35.8)	<u>A (8.3)</u> A (3.1) A (5.8) D (36.6)	<u>D / D / D</u> - - -
6	<u>Main St @ E Cherokee Dr / Publix Drwy</u> -Eastbound Approach -Westbound Approach -Northbound Approach -Southbound Approach	Signalized	D (40.8) E (58.8) D (39.7) D (43.3) D (37.8)	D (36.0) D (51.4) C (29.3) D (40.6) C (31.9)	C (27.9) D (40.0) C (22.2) C (34.8) C (23.5)	<u>D / D / D</u> - - - -
7	<u>Main St @ Rope Mill Rd / E Main St</u> -Eastbound Approach -Westbound Approach -Northbound Approach -Southbound Approach	Stop Controlled EB & WB	<u>E (41.1)</u> <u>F (86.7)</u> A (6.7) A (0.3)	C (17.1) D (32.7) A (2.4) A (0.0)	B (14.9) <u>F (50.3)</u> A (3.2) A (0.1)	E / D / D E / D / E D / D / D D / D / D
8	<u>Woodstock Pkwy @ Rope Mill Rd / Outlet Shoppes Drwy</u> -Eastbound Approach -Westbound Approach -Northbound Approach -Southbound Approach	Roundabout	A (7.1) A (7.0) A (6.3) A (9.4)	A (5.0) A (5.9) A (6.7) A (4.7)	A (7.2) A (5.5) A (6.6) A (4.8)	D / D / D D / D / D D / D / D D / D / D
9	<u>Ridgewalk Pkwy @ Main St</u> -Eastbound Approach -Northbound Approach -Southbound Approach	Signalized	<u>B (19.5)</u> A (6.0) B (17.2) C (31.1)	<u>C (22.3)</u> A (8.5) C (20.7) C (33.4)	<u>B (19.5)</u> C (20.9) B (11.4) C (21.7)	<u>D / D / D</u> - - -

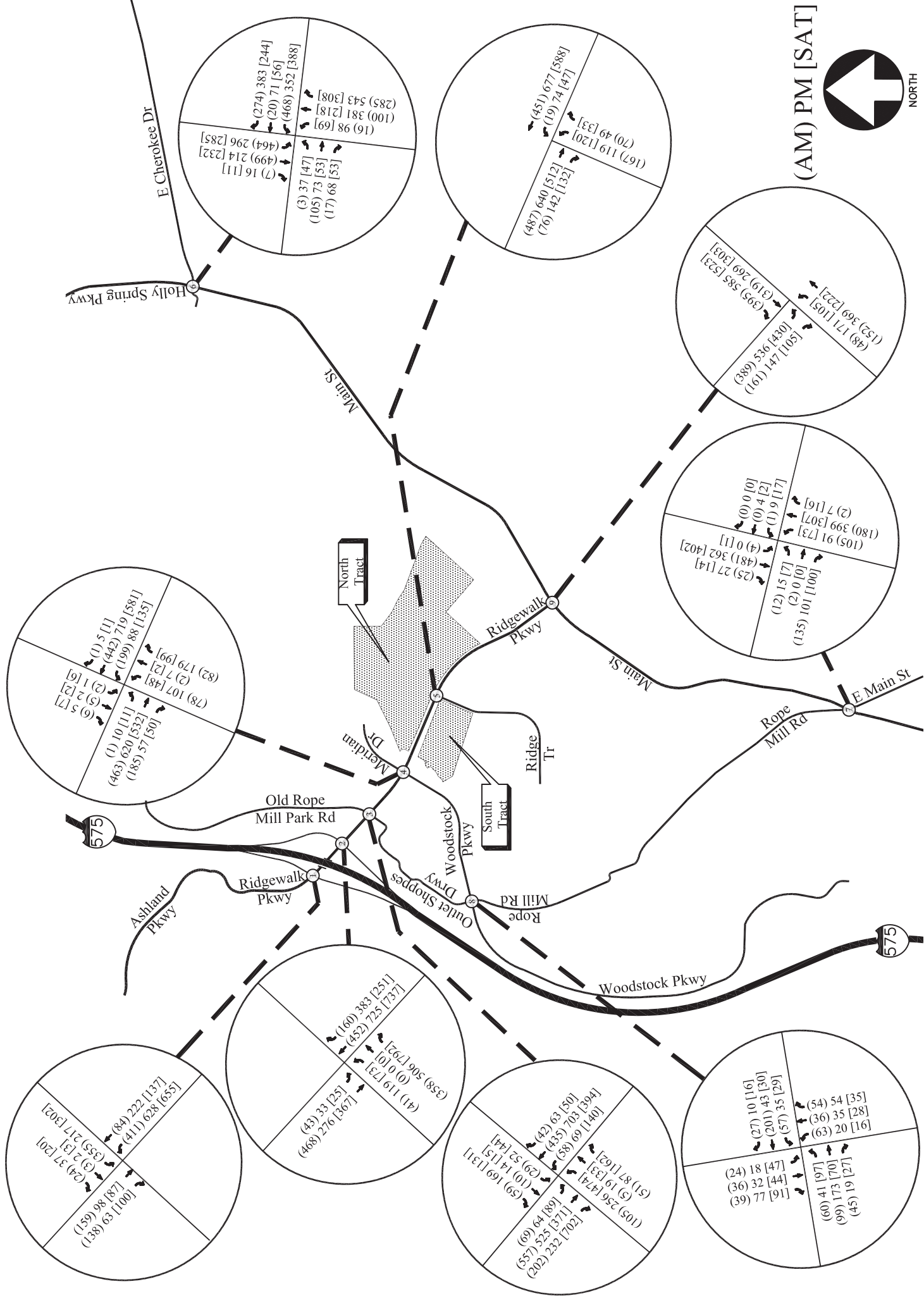
*GDOT Roundabout Analysis Tool (v2.1) used for analysis of Woodstock Pkwy @ Rope Mill Rd

TABLE 4 — EXISTING INTERSECTION 95TH PERCENTILE QUEUES

Intersection		Available Storage	AM Peak: feet	PM Peak: feet	SAT Peak: feet
1	<u>Ridgewalk Pkwy @ I-575 SB Ramps</u>				
	-Eastbound Approach	-	89	52	53
	-Westbound Left	600'	379	579	610
	-Westbound Through	-	11	45	49
	-Southbound Left/Through	-	98	89	90
	-Southbound Right	250'	6	17	4
2	<u>Ridgewalk Pkwy @ I-575 NB Ramps</u>				
	-Eastbound Left	500'	3	6	2
	-Eastbound Through	600'	28	81	17
	-Westbound Through	-	28	86	96
	-Westbound Right	250'	5	26	24
	-Northbound Left/Through	-	53	115	79
	-Northbound Right	-	0	0	0
3	<u>Ridgewalk Pkwy @ Old Rope Mill Park Rd/ Outlet Shoppes Drwy</u>				
	-Eastbound Left	250'	16	28	40
	-Eastbound Through/ Right	-	78	123	173
	-Eastbound Right	375'	6	16	36
	-Westbound Left	275'	11	20	91
	-Westbound Through/Right	-	64	202	120
	-Northbound Left	-	97	301	488
	-Northbound Through/Right	-	0	26	29
	-Southbound Left	200'	33	48	35
	-Southbound Through/Right	-	12	40	27
4	<u>Ridgewalk Pkwy @ Woodstock Pkwy / Meridian Dr</u>				
	-Eastbound Left	100'	1	2	2
	-Eastbound Through	-	45	18	36
	-Eastbound Right	100'	1	0	0
	-Westbound Left	100'	118	18	43
	-Westbound Through/Right	-	121	66	60
	-Northbound Left	210'	71	104	56
	-Northbound Through/Right	-	0	0	0
	-Southbound Approach	-	15	10	12
5	<u>Ridgewalk Pkwy @ Ridge Tr</u>				
	-Eastbound Approach	-	155	85	30
	-Westbound Left	100'	11	24	17
	-Westbound Through	-	120	158	93
	-Northbound Approach	-	136	128	125
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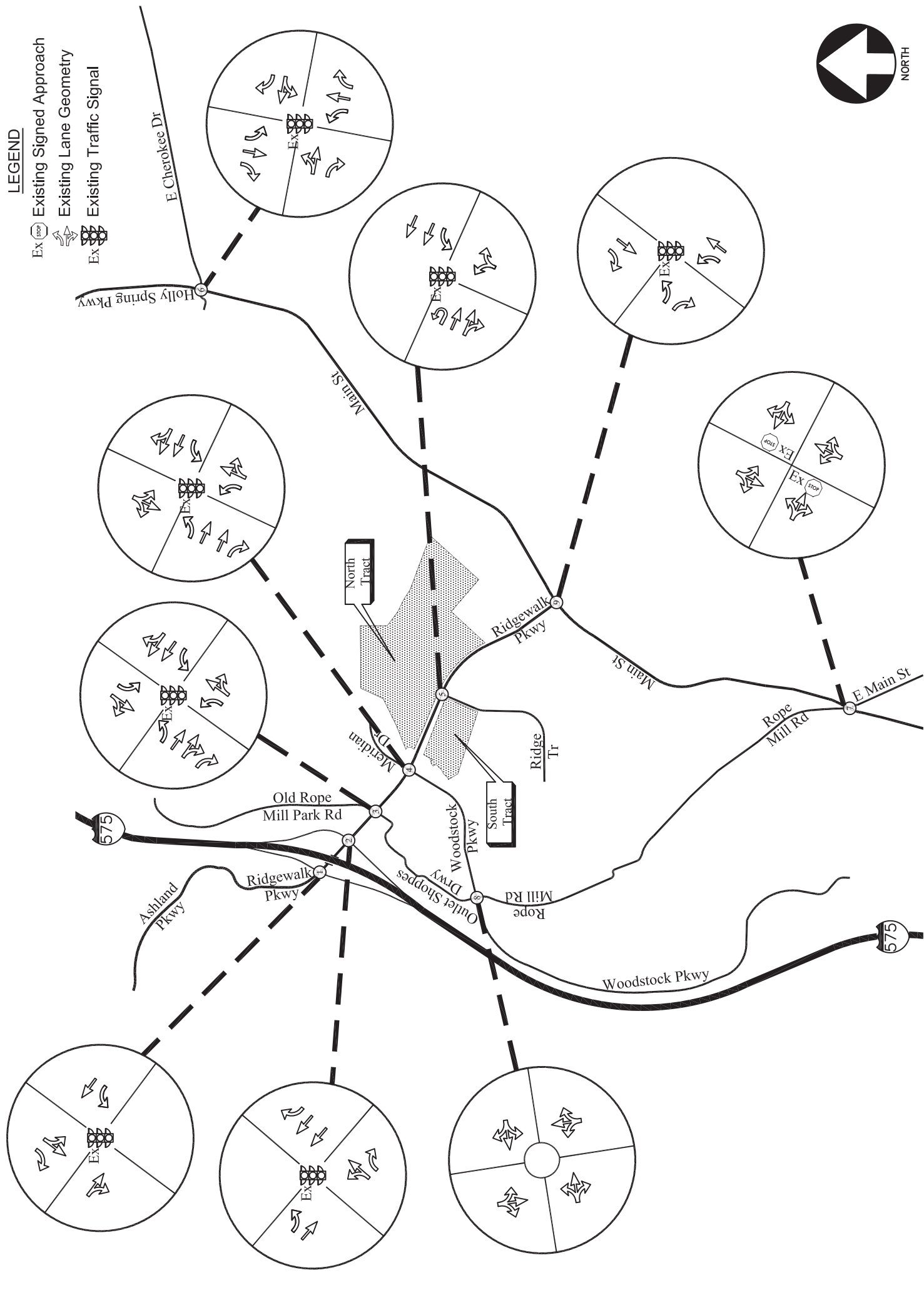
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Intersection		Available Storage	AM Peak: feet	PM Peak: feet	SAT Peak: feet
6	<u>Main St @ E Cherokee Dr</u>	-	172	206	173
	-Eastbound Left/Through	-	0	11	0
	-Eastbound Right	-	552	404	382
	-Westbound Left	650'	27	83	58
	-Westbound Through	-	44	43	50
	-Westbound Right	300'	19	91	74
	-Northbound Left	100'	138	515	311
	-Northbound Through	-	56	152	86
	-Northbound Right	255'	455	337	281
	-Southbound Left	330'	587	224	260
	-Southbound Through	-	0	0	0
	-Southbound Right	120'			
7	<u>Main St @ Rope Mill Rd / E Main St</u>	-	136	34	27
	-Eastbound Approach	-	7	11	34
	-Westbound Approach	-	25	7	10
	-Northbound Approach	-	1	0	0
	-Southbound Approach	-			
9	<u>Ridgewalk Pkwy @ Main St</u>	-	67	403	304
	-Eastbound Left	-	0	0	0
	-Eastbound Right	-	31	98	61
	-Northbound Left	200'	77	228	122
	-Northbound Through	-	224	215	236
	-Southbound Through	-	51	42	74
	-Southbound Right	110'			

The results of the existing conditions analysis indicate that all study intersections have an acceptable level-of-service ("D" or better by local standards) in the evening peak period. In the morning and Saturday peak periods, one or more approaches to stop-controlled side-streets at the intersection of Main Street at Rope Mill Road / E. Main Street are operating at level-of-service "E" or "F". These areas are addressed in the Future Traffic Analysis section.



EXISTING WEEKDAY PEAK HOUR VOLUMES

FIGURE 2



EXISTING TRAFFIC CONTROL AND LANE GEOMETRY

FIGURE 3

5. PROJECT DESCRIPTION

The proposed site will be located along the north and south sides of Ridgewalk Parkway to the east of Woodstock Parkway / Meridian Drive in Woodstock, Georgia. The traffic analysis evaluates the current operations compared to the future conditions with the traffic generated by the development. The northern tract of the proposed development will consist of:

- Total Retail: 260,772 sf
- Mixed-Use Office: 5,000 sf
- Single Family Detached Housing: 23 lots
- Apartment: 320 units
- Fuel Center: 18 positions

The southern tract of the development will consist of:

- Mixed-Use Retail: 70,000 sf
- Mixed-Use Office: 30,000 sf

The development proposes access at the following locations:

- Site Driveway #1: right-in / right-out driveway on the west side of the north tract's frontage along Ridgewalk Parkway
- Site Driveway #2: full access driveway on Ridgewalk Parkway that aligns with the signal at Ridge Trail
- Site Driveway #3: right-in / right-out driveway on the east side of the north tract's frontage along Ridgewalk Parkway
- Site Driveway #4: full access driveway on Ridge Trail, just south of the intersection at Ridgewalk Parkway
- Site Driveway #5: right-in / right-out driveway on the east side of the south tract's frontage along Ridgewalk Parkway (across from site driveway #1)

5.1 Site Plan

A site plan is shown in Figure 4. A larger size drawing and a digital copy of the site plan are also provided with this report.

Planned Bicycle and Pedestrian Facilities

The on and/or off-site provisions for non-motorized travel included in the planned construction of the proposed development are as follows:

- The proposed development will be comprised of residential, retail, and office uses. Pedestrian connections are proposed between the mixed-uses on the site.
- The development plan includes several design elements that enhance the character and quality the site by incorporating building orientation, parking locations, bicycle and pedestrian facilities, and a mix of land uses.
- The convenience and flexibility of the site benefit from public access to adjacent streets and internal connectivity between the parcels.

Planned Transit Facilities

There is no public transit service near the site. No transit facilities are planned for the development.

5.2 Consistency with Adopted Comprehensive Plan

The proposed development is currently zoned as New Community Town Center, which generally promotes an urban mixed-use center. The future development map identifies the area as Community Village Center, which is envisioned as places where a compatible mixture of higher intensity uses are located, such as larger scaled shopping centers, professional offices and services serving several neighborhoods.

5.3 Project Phasing

This project has been evaluated for the complete build-out of the development by the year 2020.

5.4 Trip Generation

Trip generation estimates for the project were based on the rates and equations published in the 9th edition of the Institute of Transportation Engineers (ITE) Trip Generation report. This reference contains traffic volume count data collected at similar facilities nationwide. The trip generation was based on the following ITE Land Uses:

- 210-Single-Family Detached Housing
- 220-Apartment
- 710-General Office Building
- 820-Shopping Center
- 944-Gasoline/Service Station

Due to the nature of the development, pass-by and mixed-use reductions have been applied per ITE standards. A 2% alternative mode reduction has also been applied due to accessibility to the City's Greenprints Trail System, as noted in the GRTA Letter of Understanding. The calculated total trip generation for the proposed development is summarized in Table 5. Detail Trip Generation calculations are provided in Tables 6 and 7.

TABLE 5 — TRIP GENERATION										
Land Use	AM Peak Hour			PM Peak Hour			SAT Peak Hour		Weekday	
	Total	Enter	Exit	Total	Total	Enter	Exit	Total	Total	Enter
North Tract - Retail Trips	189	130	319	391	423	814	590	560	1,150	10,077
North Tract - Residential Trips	25	122	147	96	36	132	62	40	102	1476
North Tract - Office Trips	10	2	12	10	55	65	1	1	2	107
Total Added Trips for North Tract	224	254	478	497	514	1,011	653	601	1,254	11,660
South Tract - Retail Trips	73	46	119	145	159	304	233	214	447	3,688
South Tract - Office Trips	63	6	69	19	89	108	7	6	13	493
Total Added Trips for South Tract	136	52	188	164	248	412	240	220	460	4,181
TOTAL SITE ADDED TRIPS	360	306	666	661	762	1,423	893	821	1,714	15,841

TABLE 6 - NORTH TRACT TRIP GENERATION

Land Use	Size	AM Peak Hour			PM Peak Hour			SAT Peak Hour			Weekday
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	24-Hr
Shopping Center	260,772 sf	173	107	280	547	592	1,139	848	782	1,630	12,662
Fuel Center	18 pumps	101	98	199	125	125	250	125	125	250	3,034
Apartment	320 units	32	129	161	126	68	194	75	75	150	2,063
Single-Family Detached	23 units	6	20	26	18	10	28	16	13	29	272
General Office Building	5,000 sf	15	2	17	14	70	84	1	1	2	135
Total Site Demand (no reductions)		327	356	683	830	865	1,695	1,065	996	2,061	18,166
Internal Capture for Shopping Center		-20	-14	-34	-44	-40	-84	-38	-23	-61	-688
Internal Capture for Fuel Center		-5	-3	-8	-10	-9	-19	-9	-5	-14	-165
Internal Capture for Residential		-12	-25	-37	-46	-41	-87	-28	-47	-75	-829
Internal Capture for General Office		-5	0	-5	-4	-14	-18	0	0	0	-26
Total Mixed-Use Trip Reduction		-42	-42	-84	-104	-104	-208	-75	-75	-150	-1,708
Pass-by for Retail (0%) 34% [34%]		0	0	0	-171	-188	-359	-275	-258	-533	-3,590
Pass-by for Fuel (58%) 42% [42%]		-56	-55	-111	-48	-49	-97	-49	-50	-99	-970
Total Pass-by Trip Reduction		-56	-55	-111	-219	-237	-456	-324	-308	-632	-4,560
Alternative Mode Reduction (2%)		-5	-5	-10	-10	-10	-20	-13	-12	-25	-238
Total New External Vehicle Trips		224	254	478	497	514	1,011	653	601	1,254	11,660

*pass-by trips (AM) PM; 24 Hour pass-by trips estimated by considering PM pass-by as 10% of daily

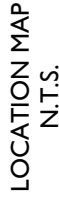
TABLE 7 — SOUTH TRACT TRIP GENERATION

Land Use	Size	AM Peak Hour			PM Peak Hour			SAT Peak Hour			Weekday
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	24-Hr
Shopping Center	70,000 sf	78	47	125	226	246	472	361	332	693	5,386
General Office Building	30,000 sf	64	9	73	19	93	112	7	6	13	526
Total Site Demand (no reductions)		142	56	198	245	339	584	368	338	706	5,912
Internal Capture for Retail		-3	0	-3	-2	0	-2	0	0	0	-23
Internal Capture for General Office		0	-3	-3	0	-2	-2	0	0	0	-23
Total Mixed-Use Trip Reduction		-3	-3	-6	-2	-2	-4	0	0	0	-46
Pass-by for Retail (0%) 34% [34%]		0	0	0	-76	-84	-160	-123	-113	-236	-1,600
Total Pass-by Trip Reduction		0	0	0	-76	-84	-160	-123	-113	-236	-1,600
Alternative Mode Reduction (2%)		-3	-1	-4	-3	-5	-8	-5	-5	-10	-85
Total New External Vehicle Trips		136	52	188	164	248	412	240	220	460	4,181

*pass-by trips (AM) PM [SAT]; 24 Hour pass-by trips estimated by considering PM pass-by as 10% of daily

5.5 Trip Distribution

The trip distribution describes how traffic arrives and departs from the site. An overall trip distribution was developed for the site based on a review of the existing travel patterns in the area and the locations of major roadways and highways that will serve the development. The site-generated peak hour traffic volumes, shown in Table 5, were assigned to the study area intersections based on this distribution. The outer-leg distribution and AM and PM peak hour new traffic generated by the site are shown in Figure 5. Pass-by volumes have also been distributed based on existing travel patterns and are shown in Figure 6.



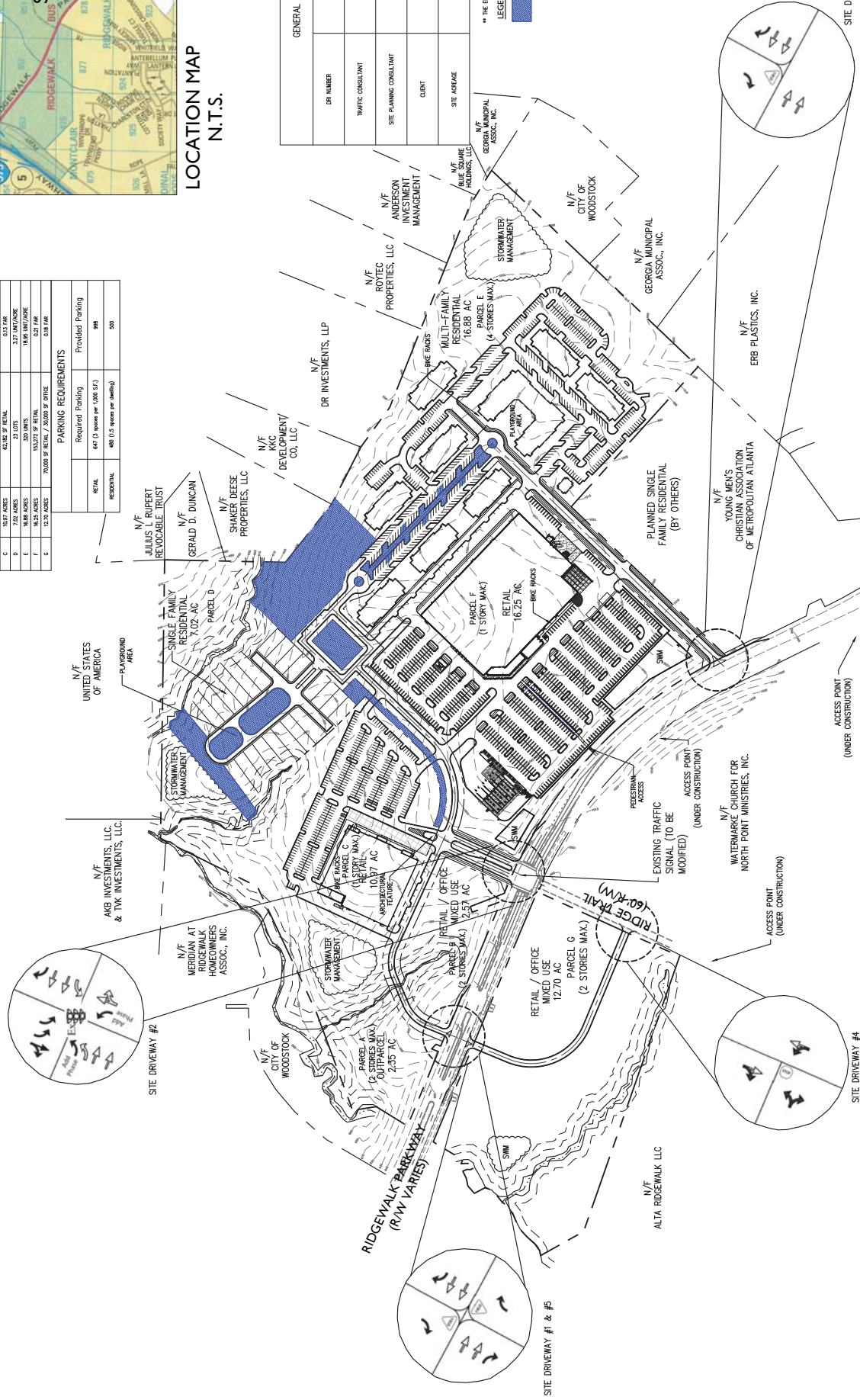
PARCEL	LAND USE DENSITY			DENSITY
	ACREAGE	USE	USE	
A	2.56 ACRES	22,609 SF RETAIL	2,500 SF OFFICE	0.52 FAR
B	2.57 ACRES	22,649 SF RETAIL	2,500 SF OFFICE	0.52 FAR
C	10.7 ACRES	43,185 SF RETAIL	23 OFFICE	0.52 FAR
D	7.02 ACRES	23 OFFICE	127 MBT/JOKE	0.52 FAR
E	8.49 ACRES	200 MBT	18,800 MBT/JOKE	0.52 FAR
F	16.25 ACRES	16,000 SF OFFICE	16,000 SF OFFICE	0.52 FAR
G	12.75 ACRES	70,000 SF RETAIL	7,000 SF OFFICE	0.52 FAR

PARKING REQUIREMENTS		
	Required Parking	Provided Parking
RETAIL	447 (3 spaces per 1,000 S.F.)	498
RESIDENTIAL	440 (1.5 spaces per dwelling)	500

GENERAL INFORMATION	
DR. NUMBER	2520
TRAFFIC CONSULTANT	AME CONSULTING INC. 2100 WEST CONROE AVE. 0 MURFREESBORO, TN 37055 773-295-2950 WWW.AMECONSULTING.COM
SITE PLANNING CONSULTANT	ACEC INC. 50 NAWA SPRINGS CIRCLE NORTH DALLAS, TX 75244 770-641-1142 WWW.ACEC.COM
CLIENT	HERZOG GROUP PROPERTIES, INC. 3001 W. WILSON AVE. 300 MUSKOGEE, AL 36441 251-796-4125 WWW.HERZOGGROUP.COM
SITE ADDRESS	80.11 AMES

THE ENTIRE PROJECT IS WITHIN THE CITY OF WOODSTOCK LIMITS

- CIVIC SPACE (4.42 ACRES)



RIDGEWALK CENTER

City of Woodstock, Georgia

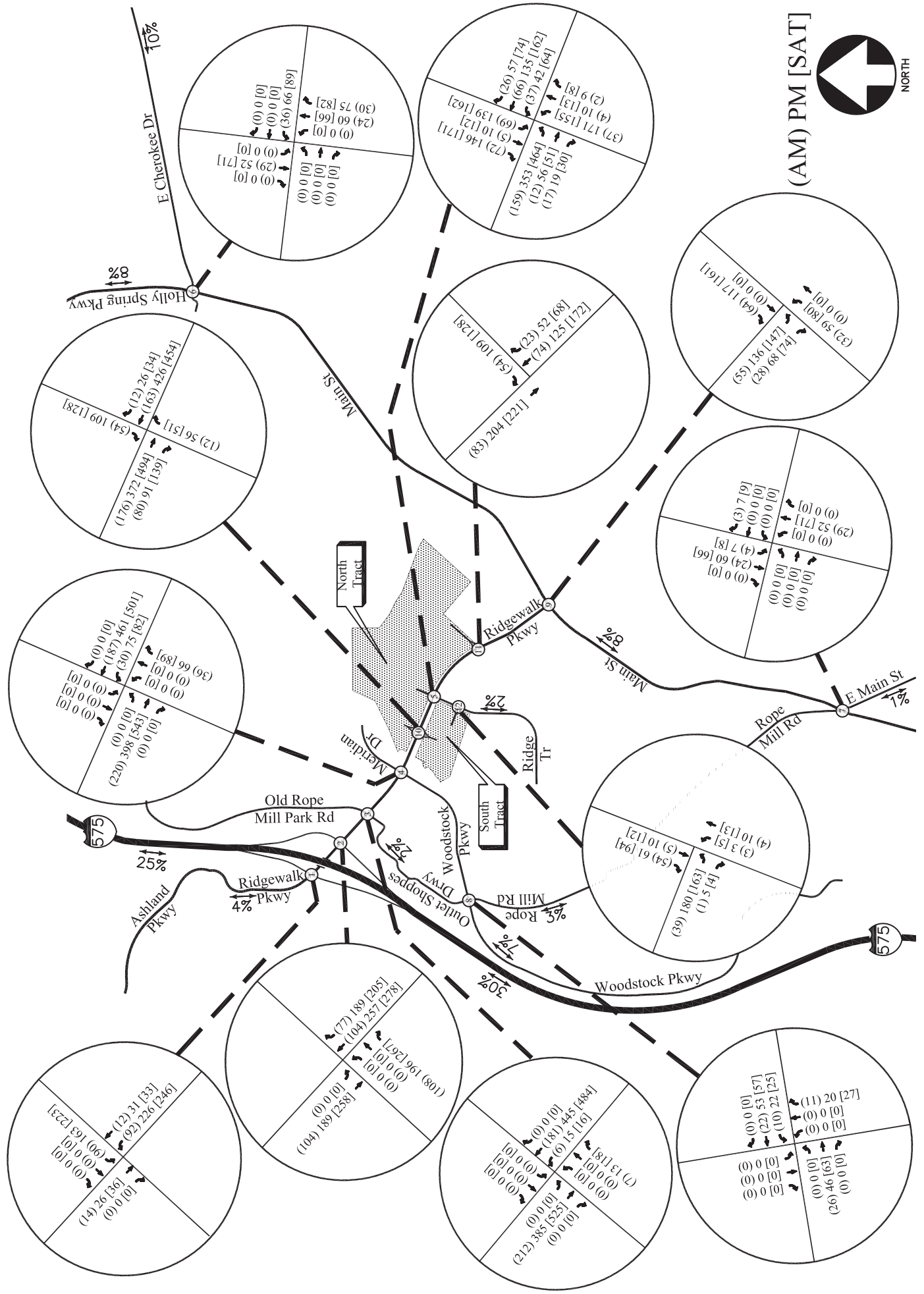
CONCEPTUAL
GRTA DRI
SITE PLAN



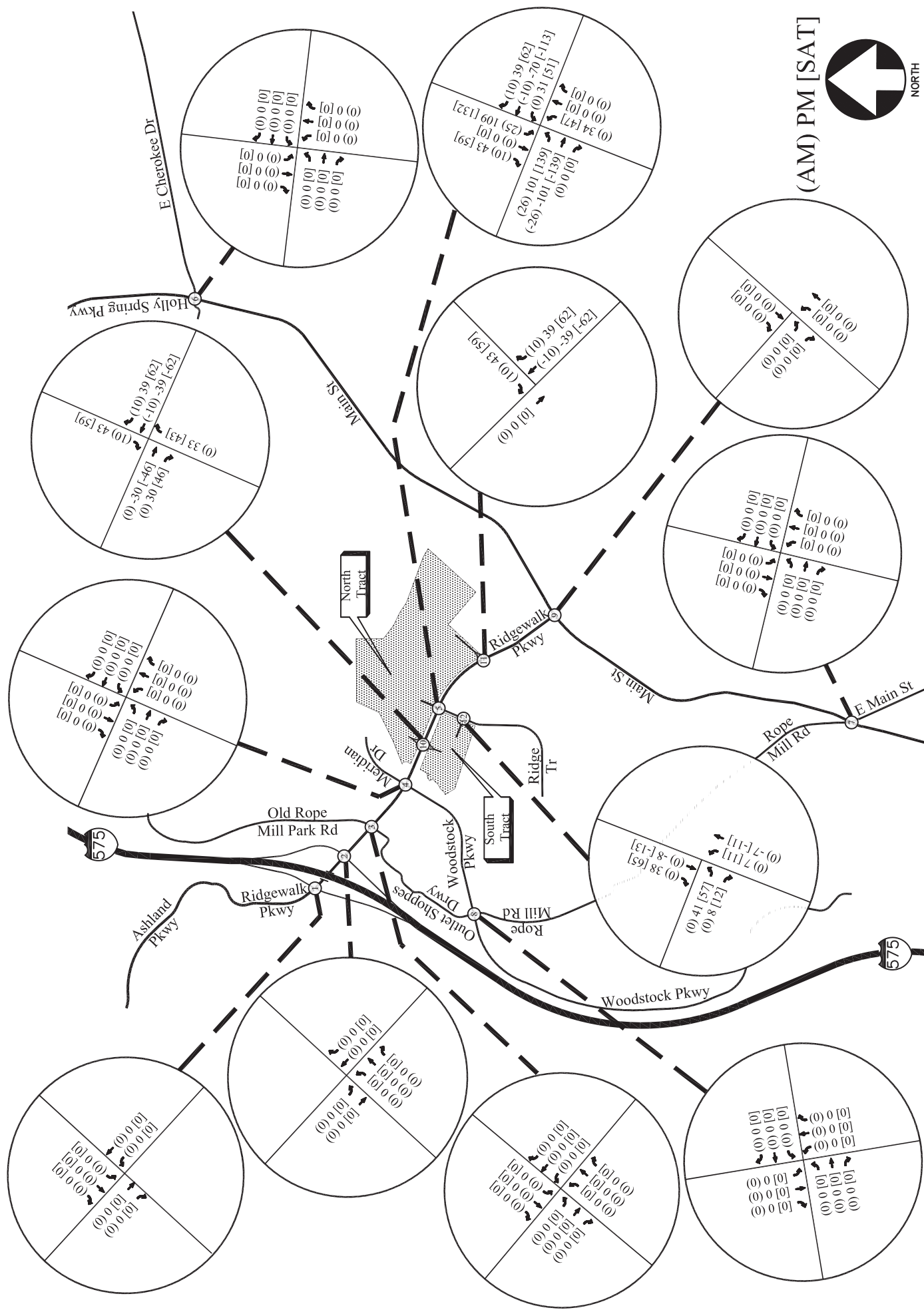
CIVIL ENGINEERING • PLANNING • LANDSCAPE ARCHITECTURE
50 Warm Springs Circle
Roswell • Georgia • 30075
(770) 641-1942 • www.aesai.com

PROJECT INFORMATION

PROJECT NO.: 15-3825.00
DATE: 01-26-2016
SCALE: 1" = 150'
FILE NAME: 15-3825 P01.dwg
DESIGN/DRAWN: 1WM/SLR



OUTER LEG TRIP DISTRIBUTION AND SITE-GENERATED
PEAK HOUR VOLUMES



SITE PEAK HOUR PASS-BY VOLUMES

6. FUTURE TRAFFIC ANALYSIS

The future traffic operations are analyzed for the “Build” and “No-Build” conditions. This provides a reference for determining both the contribution of the site to overall traffic conditions and the additional improvements needed to provide sufficient site access and capacity for passing traffic. *Note that survey and construction drawings would be needed to verify the feasibility and extent of additional right-of-way required for any recommended improvements.*

Improvements that are identified as “System Improvements” address deficiencies that are found within the existing road network prior to any impacts from the proposed development’s added traffic. Improvements that are identified as “Site Mitigation Improvements” address further impacts that are a result of the proposed development’s added traffic.

6.1 Future “No-Build” Conditions

The “No-Build” (or background) conditions provide an assessment of how traffic will operate in the study horizon year without the study site being developed as proposed, with projected increases in through traffic volumes due to normal annual growth. The Future “No-Build” volumes consist of the existing traffic volumes (Figure 2) plus increases for annual growth of through traffic.

6.1.1 Annual Traffic Growth

In order to evaluate future traffic operations in this area, a projection of normal traffic growth was applied to the existing volumes. Based on the GRTA LOU, a 2% annual growth factor was applied to the existing traffic volumes between collector and arterial roadways in order to estimate the future year traffic volumes prior to the addition of site-generated traffic. The resulting Future “No-Build” volumes on the roadway are shown in Figure 8.

6.1.2 Planned and Programmed Improvements in Study Area

The following improvements have been identified in the Regional Transportation Plan (Plan 2040), GDOT TransPi, and/or the local comprehensive transportation plan. These improvements are within the vicinity of the proposed development.

TABLE 8 — PLANNED AND PROGRAMMED IMPROVEMENTS

ARC # / GDOT #	Project	Type of Improvement	Network Year	Source
AR-ML-930 / 0008256	Northwest Corridor (I-75 And I-575) Managed Lanes on I-75 and from I-75 To Sixes Road on I-575	Roadway / Managed Lanes	Under Construction (2020)	Plan 2040
CH-228 / 0013135	Cherokee County Countywide Signal Timing Project	Roadway / Operations & Safety	2020	Plan 2040
CH-167 / NA	Arnold Mill Road Extension/Connector - New Alignment From Main Street South of Ridgewalk Parkway to Arnold Mill Road at Neese Road	Roadway / Managed Lanes	2030 / TBD (2020)	Plan 2040 / City of Woodstock Transportation Plan GIS
NA / 0010648	CR 1061/Main Street from Towne Lake Pkwy to Rope Mill Road - additional parking, sidewalks, and straightening of street striping	Streetscape	Mgmt Let Date 8/15/2019	GDOT / City of Woodstock Transportation Plan GIS
ASP-CH-002 / NA	East Cherokee Dr Widening (Old SR-5 to SR-140)	General Purpose Roadway Capacity	Aspirations	Cherokee County Transportation Plan
NA / NA	E Cherokee Drive at Old Hwy 5	Intersection Improvements	Spring 2016	Cherokee County Roadway Capital Program Management

Projects included in the model for the future conditions are:

East Cherokee Drive at Old Hwy 5 Intersection Improvements

This project includes the construction of dual left turn lanes from Old Hwy 5 to East Cherokee Drive east, and dual left turn lanes from East Cherokee Drive to Old Hwy 5 south. The project also includes a right run lane from East Cherokee Drive to Mill Creek Rd. Additional receiving lanes are also included on East Cherokee Drive and Old Hwy 5. The project is currently undergoing right-of-way acquisition and is projected to be let in Spring 2016.

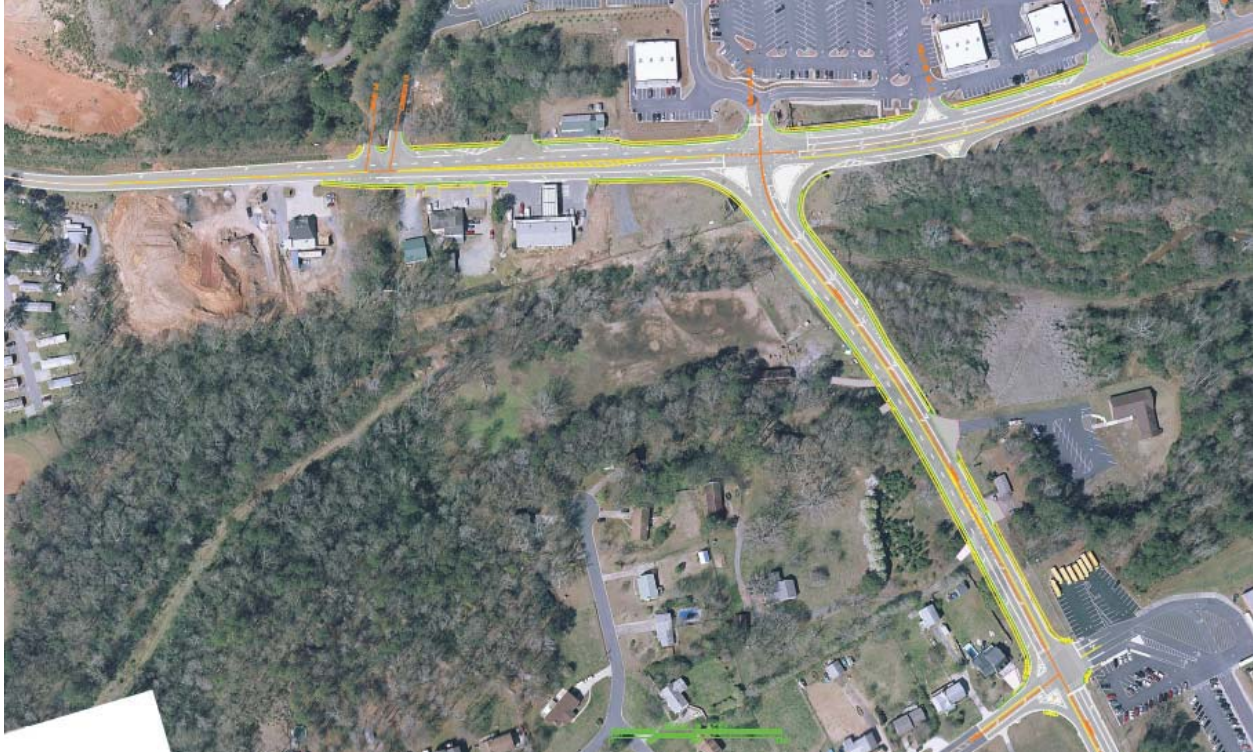


Figure 7 - East Cherokee Drive at Old Hwy 5 Intersection Improvements (dated June 2016)

6.1.3 Recommendations for System Improvements

Improvements that are identified as system improvements address deficiencies that are found the study network for the “No-Build” conditions, without the addition of traffic from the proposed development. The following improvements result in the following intersections operating at their level-of-service standard or better (except where stated otherwise). These are recommended for consideration in future local / state transportation planning. *Survey and construction drawings may be needed to verify the feasibility and extent of additional right-of-way required for any recommended improvements.*

Please note that the following improvements are in addition planned improvement projects that are to be completed by 2020. Signal timing splits and cycle lengths may have been adjusted to account for continued signal maintenance and timing optimization along signalized corridors. A summary of the system improvements is provided below, with more detailed information on each intersection in the following narratives.

Summary of Recommended System Improvements

- Ridgewalk Pkwy @ I-575 SB Ramps – Add a protected / permissive signal phase to westbound left movement

Intersection #1 – Ridgewalk Parkway @ I-575 Southbound Ramps

The intersection of Ridgewalk Parkway at I-575 Southbound Ramps is currently operating at an overall level-of-service “D” in the AM and/or PM peak hour. After accounting for growth of background traffic,

the intersection will operate at level-of-service “F” in the evening peak hour. In order to bring the level-of-service to the accepted threshold “D”, it is recommended that a westbound right turn phase be added to the signal.

Intersection #7 – Main Street @ Rope Mill Road / E. Main Street

The intersection of Main Street @ Rope Mill Road / E. Main Street is currently operating with eastbound and westbound delays beyond the level-of-service “E” and “F” thresholds. After accounting for growth of background traffic, the eastbound and westbound side-street approaches have increased delays, and operate beyond the LOS “F” threshold. The westbound approach is considered as having “acceptable operations” (peak hour delays of less than 4.0 vehicle-hours) per NCHRP 457 due to the low-volume (fewer than 30 vehicles per hour) and less than 1.0 vehicle-hours of total delay.

The eastbound approach does have a measurable total delay in the AM peak hour; however, right-of-way and railroad constraints are prohibitive to widening for additional turn lanes. Delays are caused by side-street wait times to turn left onto the mainline. As the intersection is does not likely warrant construction of a signal to improve side-street delays, no additional improvements will aid left turn vehicles. Queues are not anticipated to impede other major intersections.

6.1.4 Future “No-Build” Traffic Operations

The future “No-Build” traffic operations were analyzed using the volumes in Figure 10. The results are shown in Tables 9 and 10.

TABLE 9 — FUTURE “NO-BUILD” INTERSECTION OPERATIONS

Intersection		No-Build Condition: LOS (Delay)					
		NO IMPROVEMENTS			WITH SYSTEM IMPROVEMENTS		
		AM	PM	SAT	AM	PM	SAT
1	<u>Ridgewalk Pkwy @ I-575 SB Ramps</u>	<u>E (56.0)</u>	<u>D (38.4)</u>	<u>E (69.1)</u>	<u>D (54.3)</u>	<u>C (26.6)</u>	<u>D (45.2)</u>
	-Eastbound Approach	B (11.0)	A (7.0)	A (9.0)	E (55.2)	C (28.4)	D (45.1)
	-Westbound Approach	F (87.8)	D (47.2)	F (102.7)	D (49.2)	B (17.7)	D (35.6)
	-Southbound Approach	D (53.7)	C (33.4)	D (39.6)	E (60.2)	D (52.3)	E (64.3)
2	<u>Ridgewalk Pkwy @ I-575 NB Ramps</u>	<u>A (2.1)</u>	<u>A (5.9)</u>	<u>A (3.9)</u>	<u>A (2.9)</u>	<u>A (4.9)</u>	<u>A (4.7)</u>
	-Eastbound Approach	A (1.2)	A (4.2)	A (1.0)	A (1.5)	A (1.6)	A (2.7)
	-Westbound Approach	A (1.4)	A (5.3)	A (4.2)	A (2.7)	A (4.2)	A (4.5)
	-Northbound Approach	A (4.4)	A (7.8)	A (4.8)	A (5.0)	A (7.8)	A (5.8)
3	<u>Ridgewalk Pkwy @ Old Rope Mill Park Rd/ Outlet Shoppes Drwy</u>	<u>B (10.8)</u>	<u>C (34.5)</u>	<u>D (51.8)</u>	<u>B (11.8)</u>	<u>C (21.4)</u>	<u>D (44.6)</u>
	-Eastbound Approach	A (5.3)	B (13.5)	C (25.8)	A (3.9)	B (14.6)	D (40.1)
	-Westbound Approach	A (5.7)	B (16.7)	C (21.7)	B (10.9)	B (18.2)	D (43.4)
	-Northbound Approach	D (41.3)	F (129.6)	F (133.7)	D (38.1)	D (45.8)	E (62.2)
	-Southbound Approach	C (29.0)	C (21.5)	B (16.0)	C (32.6)	B (17.6)	B (14.5)
4	<u>Ridgewalk Pkwy @ Woodstock Pkwy / Meridian Dr</u>	<u>A (9.5)</u>	<u>A (8.8)</u>	<u>A (6.9)</u>	<u>A (8.7)</u>	<u>B (12.3)</u>	<u>A (6.9)</u>
	-Eastbound Approach	A (5.1)	A (2.8)	A (3.4)	A (3.1)	A (5.3)	A (2.9)
	-Westbound Approach	A (6.0)	A (3.8)	A (3.5)	A (3.6)	B (10.3)	A (1.9)
	-Northbound Approach	C (30.2)	C (33.4)	C (34.2)	D (36.6)	C (31.1)	D (42.4)
	-Southbound Approach	C (27.6)	C (29.1)	C (33.0)	C (33.5)	C (28.0)	D (41.1)
5	<u>Ridgewalk Pkwy @ Ridge Tr</u>	<u>B (14.5)</u>	<u>B (10.3)</u>	<u>A (8.6)</u>	<u>B (16.8)</u>	<u>B (10.6)</u>	<u>B (10.1)</u>
	-Eastbound Approach	A (7.7)	A (6.7)	A (3.4)	A (9.3)	A (6.0)	A (5.0)
	-Westbound Approach	A (9.2)	A (7.9)	A (5.9)	B (12.0)	A (9.6)	A (5.7)
	-Northbound Approach	D (36.3)	D (36.9)	D (37.6)	D (38.9)	D (35.5)	D (45.8)
6	<u>Main St @ E Cherokee Dr</u>	<u>D (47.7)</u>	<u>D (46.9)</u>	<u>D (37.5)</u>	<u>D (46.1)</u>	<u>D (39.5)</u>	<u>D (37.5)</u>
	-Eastbound Approach	D (49.2)	E (56.0)	D (42.3)	D (49.2)	D (45.8)	D (42.3)
	-Westbound Approach	D (54.7)	D (49.9)	D (36.0)	D (54.7)	D (44.6)	D (36.0)
	-Northbound Approach	D (35.2)	D (43.4)	D (38.2)	C (26.9)	C (31.4)	D (38.2)
	-Southbound Approach	D (47.7)	D (45.0)	D (37.1)	D (47.7)	D (44.1)	D (37.1)
7	<u>Main St @ Rope Mill Rd / E Main St</u>	<u>F (76.2)</u>	<u>C (20.3)</u>	<u>C (17.2)</u>	<u>F (76.2)</u>	<u>C (20.3)</u>	<u>C (17.2)</u>
	-Eastbound Approach	<u>F (135.0)</u>	<u>E (41.7)</u>	<u>F (77.1)</u>	<u>F (135.0)</u>	<u>E (41.7)</u>	<u>F (77.1)</u>
	-Westbound Approach	A (7.4)	A (2.6)	A (3.5)	A (7.4)	A (2.6)	A (3.5)
	-Northbound Left	A (0.2)	A (0.0)	A (0.1)	A (0.2)	A (0.0)	A (0.1)
	-Southbound Left						
8	<u>Woodstock Pkwy @ Rope Mill Rd / Outlet Shoppes Drwy</u>						
	-Eastbound Approach	A (7.8)	A (5.2)	A (7.9)	A (7.8)	A (5.2)	A (7.9)
	-Westbound Approach	A (7.6)	A (6.3)	A (5.8)	A (7.6)	A (6.3)	A (5.8)
	-Northbound Approach	A (6.8)	A (7.3)	A (7.2)	A (6.8)	A (7.3)	A (7.2)
	-Southbound Approach	B (10.7)	A (4.9)	A (5.0)	B (10.7)	A (4.9)	A (5.0)
9	<u>Ridgewalk Pkwy @ Main St</u>	<u>B (19.9)</u>	<u>C (23.6)</u>	<u>C (21.7)</u>	<u>C (22.6)</u>	<u>C (22.5)</u>	<u>C (21.4)</u>
	-Eastbound Approach	A (7.1)	B (11.3)	C (21.5)	A (5.8)	A (9.6)	C (20.9)
	-Northbound Approach	B (16.7)	C (21.2)	B (12.8)	C (22.2)	C (24.0)	B (13.8)
	-Southbound Approach	C (31.2)	C (33.9)	C (25.3)	D (36.2)	C (31.1)	C (24.8)

*GDOT Roundabout Analysis Tool (v2.1) used for analysis of Woodstock Pkwy @ Rope Mill Rd

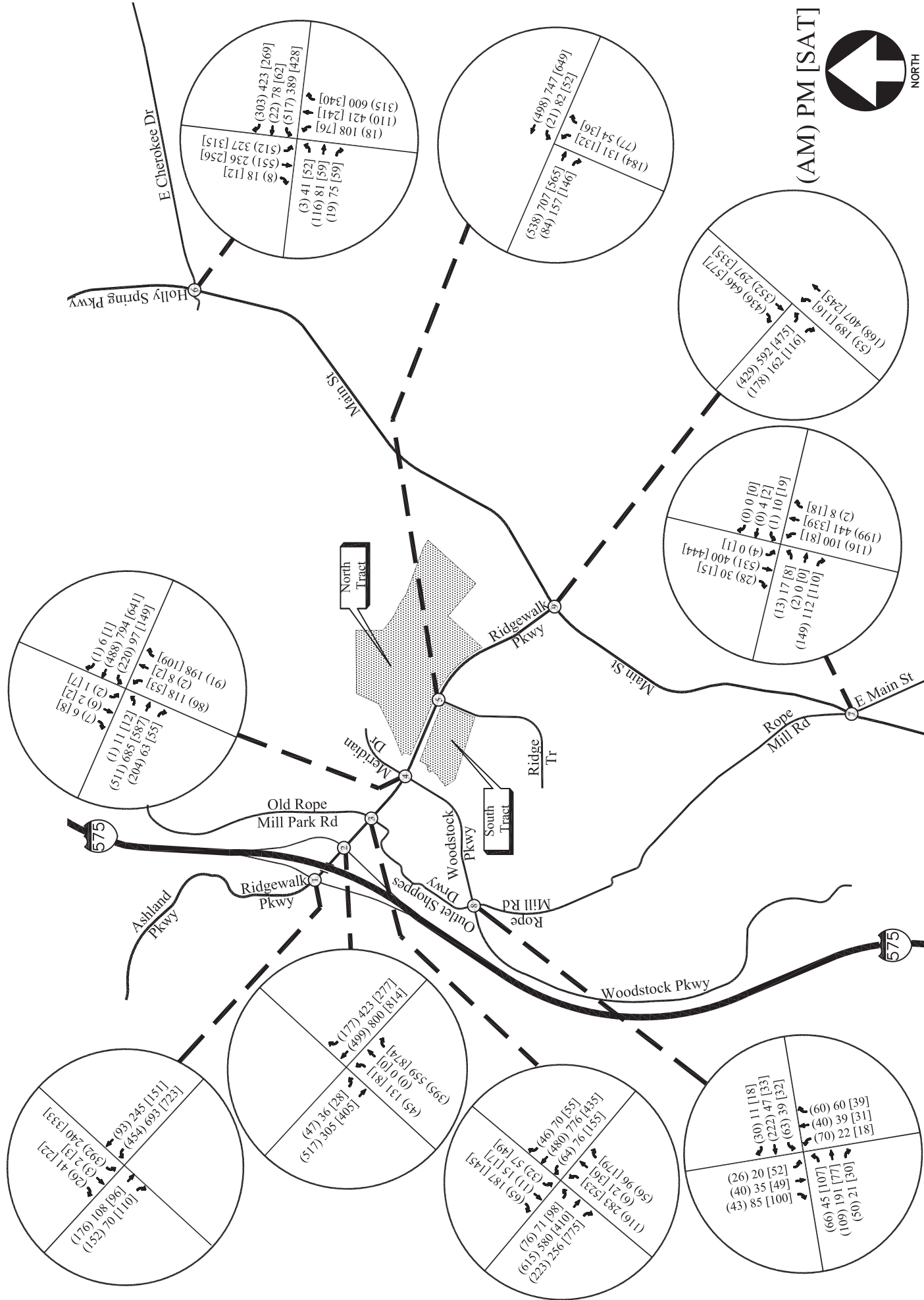
TABLE 10 — FUTURE “NO-BUILD” INTERSECTION 95TH PERCENTILE QUEUES

Intersection		Available Storage	No-Build: queue length (feet)					
			NO IMPROVEMENTS			SYSTEM IMPROVEMENTS		
			AM Peak	PM Peak	SAT Peak	AM Peak	PM Peak	SAT Peak
1	<u>Ridgewalk Pkwy @ I-575 SB Ramps</u>							
	-Eastbound Approach	-	102	60	61	248	128	204
	-Westbound Left	600'	455	678	707	386	404	592
	-Westbound Through	600'	17	54	60	35	91	63
	-Southbound Left/Through	-	108	96	98	128	113	130
	-Southbound Right	250'	8	18	5	0	0	0
2	<u>Ridgewalk Pkwy @ I-575 NB Ramps</u>							
	-Eastbound Left	420'	4	15	2	5	5	6
	-Eastbound Through	600'	29	181	18	61	33	64
	-Westbound Through	-	26	86	115	52	92	125
	-Westbound Right	250'	3	25	20	15	12	17
	-Northbound Left/Through	-	56	124	84	66	124	103
	-Northbound Right	-	0	0	0	0	0	0
3	<u>Ridgewalk Pkwy @ Old Rope Mill Park Rd/ Outlet Shoppes Drwy</u>							
	-Eastbound Left	250'	17	31	41	14	36	54
	-Eastbound Through/ Right	-	92	137	210	103	167	274
	-Eastbound Right	375'	7	17	35	0	0	1
	-Westbound Left	275'	11	20	110	32	24	137
	-Westbound Through/Right	-	69	210	128	140	167	165
	-Northbound Left	-	106	353	556	114	293	595
	-Northbound Through/Right	-	0	27	30	0	22	28
	-Southbound Left	200'	35	52	39	38	44	38
	-Southbound Through/Right	-	12	58	28	11	51	26
4	<u>Ridgewalk Pkwy @ Woodstock Pkwy / Meridian Dr</u>							
	-Eastbound Left	100'	1	2	3	0	5	3
	-Eastbound Through	-	48	20	38	32	68	40
	-Eastbound Right	100'	1	0	0	0	0	0
	-Westbound Left	100'	128	25	58	84	71	18
	-Westbound Through/Right	-	134	91	81	54	242	33
	-Northbound Left	210'	78	114	60	88	103	73
	-Northbound Through/Right	-	0	0	0	0	0	0
	-Southbound Approach	-	16	10	12	17	9	14
5	<u>Ridgewalk Pkwy @ Ridge Tr</u>							
	-Eastbound Approach	-	180	93	36	83	98	189
	-Westbound Left	100'	11	25	17	19	33	25
	-Westbound Through	-	134	182	100	165	210	124
	-Northbound Approach	-	151	141	137	163	136	159
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Intersection		Available Storage	No-Build: queue length (feet)					
			NO IMPROVEMENTS			SYSTEM IMPROVEMENTS		
			AM Peak	PM Peak	SAT Peak	AM Peak	PM Peak	SAT Peak
6	<u>Main St @ E Cherokee Dr / Publix Drwy</u>							
	-Eastbound Left/Through	-	147	226	186	147	170	186
	-Eastbound Right	-	0	6	3	0	12	3
	-Westbound Left	650'	433	375	357	433	325	357
	-Westbound Through	-	205	290	247	205	236	247
	-Westbound Right	300'	61	131	73	61	124	73
	-Northbound Left	100'	17	103	81	17	88	81
	-Northbound Through	-	130	572	329	130	499	329
	-Northbound Right	255'	58	249	121	58	134	121
	-Southbound Left	330'	260	250	219	260	233	219
	-Southbound Through	-	620	254	291	620	224	291
	-Southbound Right	120'	0	0	0	0	0	0
7	<u>Main St @ Rope Mill Rd / E Main St</u>							
	-Eastbound Approach	-	215	47	37	215	47	37
	-Westbound Approach	-	10	15	52	10	15	52
	-Northbound Approach	-	31	8	12	31	8	12
	-Southbound Approach	-	1	0	0	1	0	0
9	<u>Ridgewalk Pkwy @ Main St</u>							
	-Eastbound Left	-	77	490	346	68	490	92
	-Eastbound Right	-	0	0	0	1	1	0
	-Northbound Left	200'	33	109	67	42	120	79
	-Northbound Through	-	84	256	135	109	256	159
	-Southbound Through	-	259	262	273	279	227	270
	-Southbound Right	110'	60	46	131	105	39	153



FUTURE (NO-BUILD) PEAK HOUR VOLUMES

6.2 Future “Build” Conditions

The “Build” or development conditions include the estimated background traffic from the “No-Build” conditions plus the added traffic from the proposed development. In order to evaluate future traffic operations in this area, the additional traffic volumes from the site (Figure 5) and pass-by volumes (Figure 6) were added to base traffic volumes (Figure 8) to calculate the future traffic volumes after the construction of the development. These total future traffic volumes (Figure 11) were used to evaluate the “Build” condition, which includes the projected site traffic. The results of the “Build” operations analyses with the assumed site access configuration are shown in Tables 11 and 12.

6.2.1 Site Access Configuration

The following access configuration was utilized when modeling the proposed site driveway intersections:

- Site Driveway #1, #3, and #5: Right-in / Right-out on Ridgewalk Parkway
 - This driveway will consist of one entering lane and one exiting lane.
 - The intersection will be unsignalized with a YIELD sign on the driveway’s approach to Ridgewalk Pkwy.
 - A deceleration lane will be constructed for entering right turn movements based on local standards (See Appendix).
 - Left turns will be prohibited by a raised median on Ridgewalk Parkway.
- Site Driveway #2: signalized full access driveway on Ridgewalk Parkway at Ridge Trail
 - This driveway will consist of two entering and three exiting lanes. The southbound (exiting) approach will have a dual left turn lanes and shared through / right turn lane.
 - An additional dedicated eastbound left turn bay will be constructed for entering traffic, creating dual left turn lanes.
 - A deceleration lane will be constructed for entering right turn movements traffic based on local standards (See Appendix).
- Site Driveway #4: full access driveway on Ridge Trail, just south of the intersection at Ridgewalk Parkway
 - This driveway will consist of one entering lane and one exiting lane.
 - The intersection will be unsignalized with a STOP sign on the eastbound approach.
 - Entering left turn movements will be made from the northbound through lane. No dedicated turn bay is planned.
 - Entering right turn movements will be made from the southbound through lane. No deceleration lane is planned.

6.2.2 Recommendations for Site Mitigation Improvements

Improvements that are identified as mitigation improvements address deficiencies that are caused by site traffic and can be identified as related to the proposed development. Based on the 2020 “Build” conditions (includes background growth plus site added traffic) the following improvements result in the study intersections operating at their level-of-service standard or better (except where stated otherwise). *Please note that the following improvements are in addition to improvements needed in the*

2020 “No-Build” conditions. Survey and construction drawings may be needed to verify the feasibility and extent of additional right-of-way required for any recommended improvements.

Please note that the following improvements are in addition planned improvement projects that are to be completed by 2020 and the System Improvement recommendations from the No-Build Conditions. Signal timing spits and cycle lengths may have been adjusted to account for continued signal maintenance and timing optimization along signalized corridors. A summary of the system improvements is provided below, with more detailed information on each intersection in the following narratives.

Summary of Recommended Site Mitigation Improvements

- Ridgewalk Pkwy @ I-575 SB Ramps – Add eastbound right turn lane
- Ridgewalk Pkwy @ Ridge Trail – Add a northbound left turn lane and protected / permissive signal phase
- Ridgewalk Pkwy @ Outlets – Add northbound left turn phase to the signal
- Ridgewalk Pkwy @ Outlets – Remove right turn from shared eastbound through/right lane

Intersection #1 – Ridgewalk Pkwy @ I-575 SB Ramps

The intersection of Ridgewalk Pkwy at the I-575 SB Ramps operates at level-of-service “D” after the implementation of the No-Build System Improvements. With the added volume of traffic from the site, the intersection delays increase beyond the standard level-of-service “D” threshold.

In order to bringing the level-of-service to the accepted threshold “D”, it is recommended that an eastbound right turn lane be constructed for traffic turning onto the onramp. This improvement alone will reduce the average eastbound approach delay by half and reduce the average overall delay at the intersection by nearly 100 seconds at the heaviest peak period, as shown below. This improvement (in addition to the recommended system improvement to add a westbound left turn phase) improves the weekday AM peak to LOS “D” and nearly mitigates the development’s impact during weekday PM peak hour.

TABLE 1 1 — FUTURE “BUILD” INTERSECTION OPERATIONS

Intersection		Build Condition: LOS (Delay)					
		NO IMPROVEMENTS			Added WBL Phase and EBR Lane		
		AM	PM	SAT	AM	PM	SAT
1	<u>Ridgewalk Pkwy @ I-575 SB Ramps</u>	<u>F (122.0)</u>	<u>F (129.2)</u>	<u>F (215.3)</u>	<u>D (52.6)</u>	<u>E (71.4)</u>	<u>F (116.9)</u>
	-Eastbound Approach	B (11.3)	A (7.0)	A (9.7)	D (42.0)	D (48.8)	D (48.5)
	-Westbound Approach	F (189.6)	F (132.4)	F (215.8)	D (53.0)	E (65.7)	F (118.0)
	-Southbound Approach	F (118.6)	F (183.4)	F (307.3)	E (59.6)	F (97.0)	F (147.3)

Dual left turn lanes for the westbound left turn onto the I-575 onramp would be warranted due to the high volumes (over 900 vehicles per hour at the highest peak); however, adding this improvement would require extensive work to widen the onramp and potential right-of-way impacts or retaining walls resulting from the changes in topography. The existing onramp has an approximate width of 33 feet (6’ left shoulder, 15’ traveled-way, 12’ right shoulder) and an approximate length of 1,500 feet with

guardrail on both sides. The cross section of the onramp would need to be widened by at least 7 feet (6' left shoulder, 26' traveled-way, 8' right shoulder) to accommodate two receiving lanes from Ridgewalk Pkwy. The receiving lanes would run for the first 600 feet before merging into one lane for the final 900 feet before entering I-575. This improvement would reduce average overall delay at the intersection by more than 130 seconds during the highest peak period. This improvement has been utilized in the improvement table, but has not been identified as a site mitigation improvement because of the potential hardships resulting from the feasibility of construction.



Figure 8 - Improvement Concept for Ridgewalk Pkwy @ I-575 SB Ramps

Intersection #3 – Ridgewalk Pkwy @ Old Rope Mill Park Rd/ Outlet Shoppes Drwy

The intersection of Ridgewalk Pkwy at Old Rope Mill Park Rd/ Outlet Shoppes Drwy operates at level-of-service “D” in the No-Build scenario. With the added site traffic through the intersection, the Saturday peak hour delays increase beyond the standard level-of-service “D” threshold. Addition of a permissive / protected northbound left turn signal phase will provide more green time for the Outlet Shoppes. Additionally, the removal of the shared right turn from the outside through lane will increase the capacity for the eastbound through movement. These improvements will reduce overall intersection delays to within the level-of-service “D” threshold.



Figure 9 - Improvement Concept for Ridgewalk Pkwy @ Outlet Shoppes Drwy
Intersection #5 – Ridgewalk Pkwy @ Ridge Trail

The intersection of Ridgewalk Pkwy at Site Driveway 2 / Ridge Trail operates at level-of-service “B” in the No-Build scenario. With the added site driveway (configuration in Section 6.2.1) and associated traffic at the intersection, delays increase beyond the standard level-of-service “D” threshold. Construction of a northbound left turn bay and protected / permissive signal phase will reduce overall intersection delays to within the level-of-service “D” threshold.



Figure 10 - Improvement Concept for Ridgewalk Pkwy @ Ridge Trail

Intersection #7 – Main Street @ Rope Mill Road / E. Main Street

As in the No-Build conditions, the intersection of Main Street @ Rope Mill Road / E. Main Street is anticipated to operate with eastbound and westbound delays at level-of-service “F”. The westbound approach is considered as having “acceptable operations” (peak hour delays of less than 4.0 vehicle-

hours) per NCHRP 457 due to the low-volume (fewer than 30 vehicles per hour) and less than 1.0 vehicle-hours of total delay. The eastbound approach does have a measurable total delay in the AM peak hour; however, right-of-way and railroad constraints are prohibitive to widening for additional turn lanes. As the intersection does not likely warrant construction of a signal to improve side-street delays, no additional improvements will aid left turn vehicles. Queues are not anticipated to impede other major intersections.

6.2.3 Future “Build” Traffic Operations

The “Build” conditions are evaluated to determine effectiveness of the recommended system and site mitigation improvements. Recommendations on traffic control and lane geometry are shown graphically in Figure 12.

TABLE 12 — FUTURE “BUILD” INTERSECTION OPERATIONS							
Intersection		Build Condition: LOS (Delay)					
		NO IMPROVEMENTS			WITH SITE AND SYSTEM IMPROVEMENTS		
		AM	PM	SAT	AM	PM	SAT
1	<u>Ridgewalk Pkwy @ I-575 SB Ramps</u>	<u>F (122.0)</u>	<u>F (129.2)</u>	<u>F (215.3)</u>	<u>C (34.7)</u>	<u>D (36.7)</u>	<u>D (50.9)</u>
	-Eastbound Approach	B (11.3)	A (7.0)	A (9.7)	D (35.6)	D (40.2)	D (47.5)
	-Westbound Approach	F (189.6)	F (132.4)	F (215.8)	C (28.7)	C (30.1)	D (44.1)
	-Southbound Approach	F (118.6)	F (183.4)	F (307.3)	D (41.7)	D (51.2)	E (63.8)
2	<u>Ridgewalk Pkwy @ I-575 NB Ramps</u>	<u>A (1.9)</u>	<u>A (4.9)</u>	<u>A (5.6)</u>	<u>A (2.1)</u>	<u>A (4.2)</u>	<u>A (4.9)</u>
	-Eastbound Approach	A (1.4)	A (2.1)	A (4.4)	A (0.7)	A (1.4)	A (9.0)
	-Westbound Approach	A (1.1)	A (3.3)	A (4.1)	A (1.8)	A (2.3)	A (2.5)
	-Northbound Approach	A (3.8)	A (9.5)	A (8.2)	A (4.3)	A (9.5)	A (5.9)
3	<u>Ridgewalk Pkwy @ Old Rope Mill Park Rd/ Outlet Shoppes Drwy</u>	<u>B (10.8)</u>	<u>C (33.0)</u>	<u>F (80.4)</u>	<u>B (14.3)</u>	<u>C (32.7)</u>	<u>D (53.8)</u>
	-Eastbound Approach	A (6.7)	C (20.9)	F (80.6)	A (9.8)	B (17.1)	D (52.6)
	-Westbound Approach	A (8.1)	D (36.1)	E (59.8)	B (13.1)	C (28.4)	D (41.2)
	-Northbound Approach	C (33.6)	E (64.1)	F (127.9)	C (27.3)	D (52.3)	E (68.7)
	-Southbound Approach	C (27.6)	C (25.0)	C (23.1)	D (40.7)	F (80.2)	E (78.6)
4	<u>Ridgewalk Pkwy @ Woodstock Pkwy / Meridian Dr</u>	<u>A (8.2)</u>	<u>B (10.3)</u>	<u>B (11.5)</u>	<u>A (7.3)</u>	<u>A (9.6)</u>	<u>A (8.5)</u>
	-Eastbound Approach	A (5.5)	A (2.9)	B (12.4)	A (2.5)	A (3.2)	A (2.7)
	-Westbound Approach	A (3.3)	A (5.3)	A (7.5)	A (1.7)	A (3.6)	A (6.0)
	-Northbound Approach	C (29.9)	D (45.8)	C (27.2)	D (36.7)	D (45.8)	D (47.1)
	-Southbound Approach	C (27.6)	D (40.7)	C (27.0)	C (33.8)	D (40.7)	D (49.2)
5	<u>Ridgewalk Pkwy @ Ridge Tr / Site Drwy #2</u>	<u>D (38.4)</u>	<u>F (94.1)</u>	<u>F (109.4)</u>	<u>C (27.4)</u>	<u>D (38.9)</u>	<u>D (40.1)</u>
	-Eastbound Approach	C (30.6)	E (77.5)	F (93.5)	B (17.7)	C (25.8)	C (25.7)
	-Westbound Approach	C (31.1)	E (57.2)	F (94.9)	C (23.2)	C (28.3)	C (32.7)
	-Northbound Approach	E (73.2)	F (166.8)	F (188.2)	D (47.8)	F (97.8)	F (92.9)
	-Southbound Approach	C (25.5)	F (163.2)	F (110.4)	D (43.4)	D (45.2)	D (45.1)
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Intersection		Build Condition: LOS (Delay)					
		NO IMPROVEMENTS			WITH SITE AND SYSTEM IMPROVEMENTS		
		AM	PM	SAT	AM	PM	SAT
6	<u>Main St @ E Cherokee Dr</u>	<u>D (52.4)</u>	<u>D (45.2)</u>	<u>D (35.5)</u>	<u>D (51.5)</u>	<u>D (45.2)</u>	<u>D (35.5)</u>
	-Eastbound Approach	D (49.6)	D (48.7)	D (42.1)	D (49.5)	D (48.7)	D (42.1)
	-Westbound Approach	E (64.0)	D (52.0)	D (39.2)	E (63.9)	D (52.0)	D (39.2)
	-Northbound Approach	D (35.7)	D (35.3)	C (27.5)	C (27.1)	D (35.3)	C (27.5)
	-Southbound Approach	D (52.2)	D (52.6)	D (38.3)	D (54.3)	D (52.6)	D (38.3)
7	<u>Main St @ Rope Mill Rd / E Main St</u>						
	-Eastbound Approach	F (105.0)	D (26.8)	C (21.7)	F (105.0)	D (26.8)	C (21.7)
	-Westbound Approach	F (100.4)	E (46.7)	F (138.2)	F (100.4)	E (46.7)	F (138.2)
	-Northbound Left	A (7.3)	A (2.7)	A (3.6)	A (7.3)	A (2.7)	A (3.6)
	-Southbound Left	A (0.5)	A (0.5)	A (0.9)	A (0.5)	A (0.5)	A (0.9)
8	<u>Woodstock Pkwy @ Rope Mill Rd / Outlet Shoppes Drwy</u>						
	-Eastbound Approach	A (8.2)	A (5.9)	A (9.3)	A (8.2)	A (5.9)	A (9.3)
	-Westbound Approach	A (8.2)	A (7.1)	A (6.9)	A (8.2)	A (7.1)	A (6.9)
	-Northbound Approach	A (7.3)	A (8.6)	A (8.8)	A (7.3)	A (8.6)	A (8.8)
	-Southbound Approach	B (11.8)	A (6.1)	A (6.2)	B (11.8)	A (6.1)	A (6.2)
9	<u>Ridgewalk Pkwy @ Main St</u>	<u>B (19.7)</u>	<u>D (46.3)</u>	<u>D (40.3)</u>	<u>C (23.5)</u>	<u>D (49.7)</u>	<u>D (46.6)</u>
	-Eastbound Approach	A (7.8)	B (19.2)	B (10.8)	A (9.4)	C (28.9)	C (32.1)
	-Northbound Approach	B (15.6)	D (50.7)	D (39.5)	C (22.3)	D (50.7)	D (49.8)
	-Southbound Approach	C (30.9)	E (66.3)	E (63.7)	D (35.6)	E (66.3)	E (56.8)
10	<u>Ridgewalk Pkwy @ Site Drwy 1 / Site Drwy #5</u>						
	-Northbound Right	A (9.4)	B (10.7)	B (10.2)	A (9.6)	B (10.7)	A (9.8)
	-Southbound Right	A (9.4)	B (10.6)	B (11.1)	A (10.0)	B (10.6)	B (11.3)
11	<u>Ridgewalk Pkwy @ Site Drwy 3</u>						
	-Southbound Right	B (10.9)	C (16.0)	C (15.4)	B (10.9)	C (16.0)	C (15.4)
12	<u>Ridge Tr @ Site Drwy 4</u>						
	-Eastbound Approach	B (11.8)	C (18.4)	C (17.2)	B (11.8)	C (18.5)	C (17.4)
	-Northbound Left	A (0.1)	A (0.5)	A (0.8)	A (0.1)	A (0.5)	A (0.8)

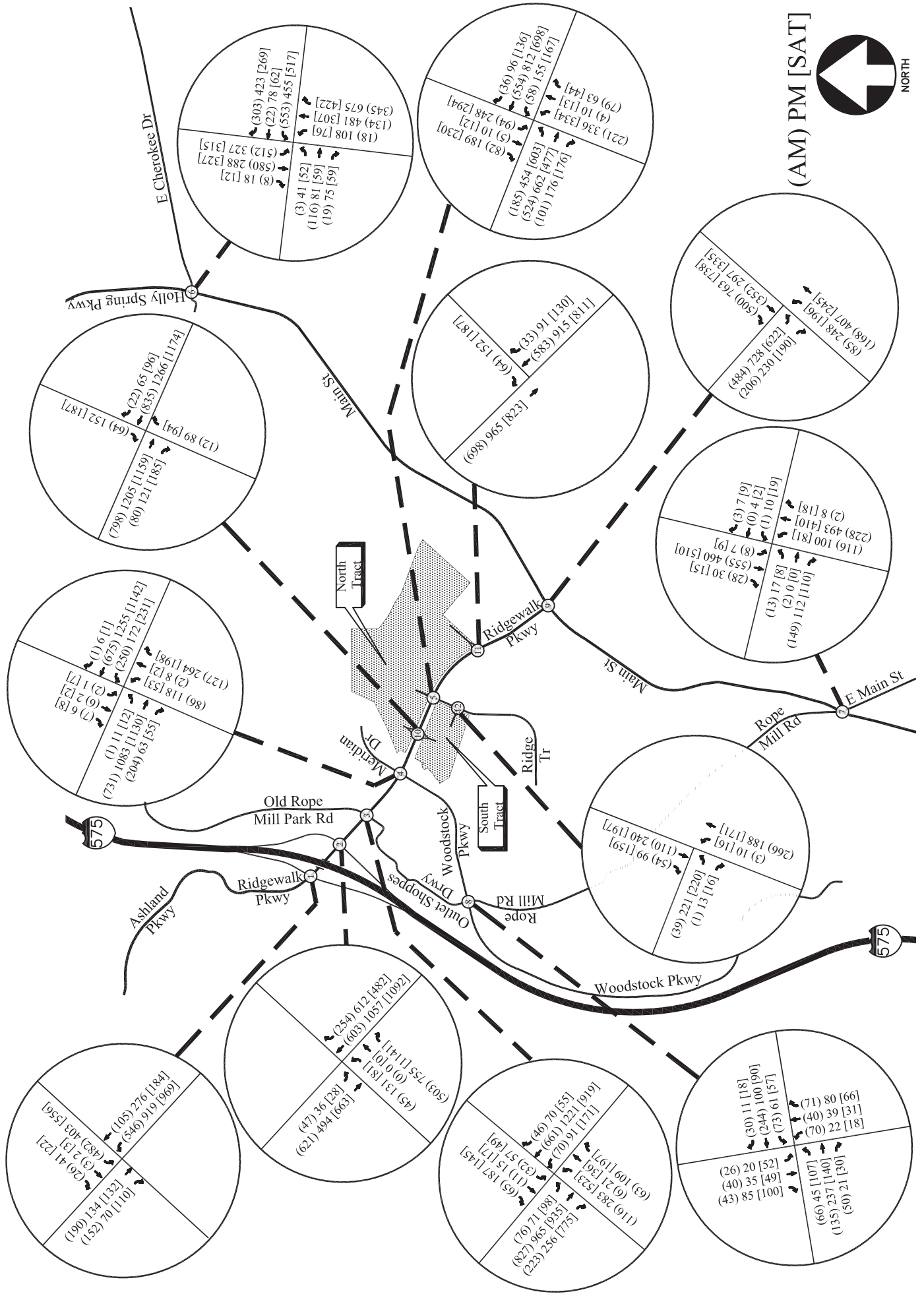
*GDOT Roundabout Analysis Tool (v2.1) used for analysis of Woodstock Pkwy @ Rope Mill Rd

TABLE 13 – FUTURE “BUILD” INTERSECTION 95TH PERCENTILE QUEUES

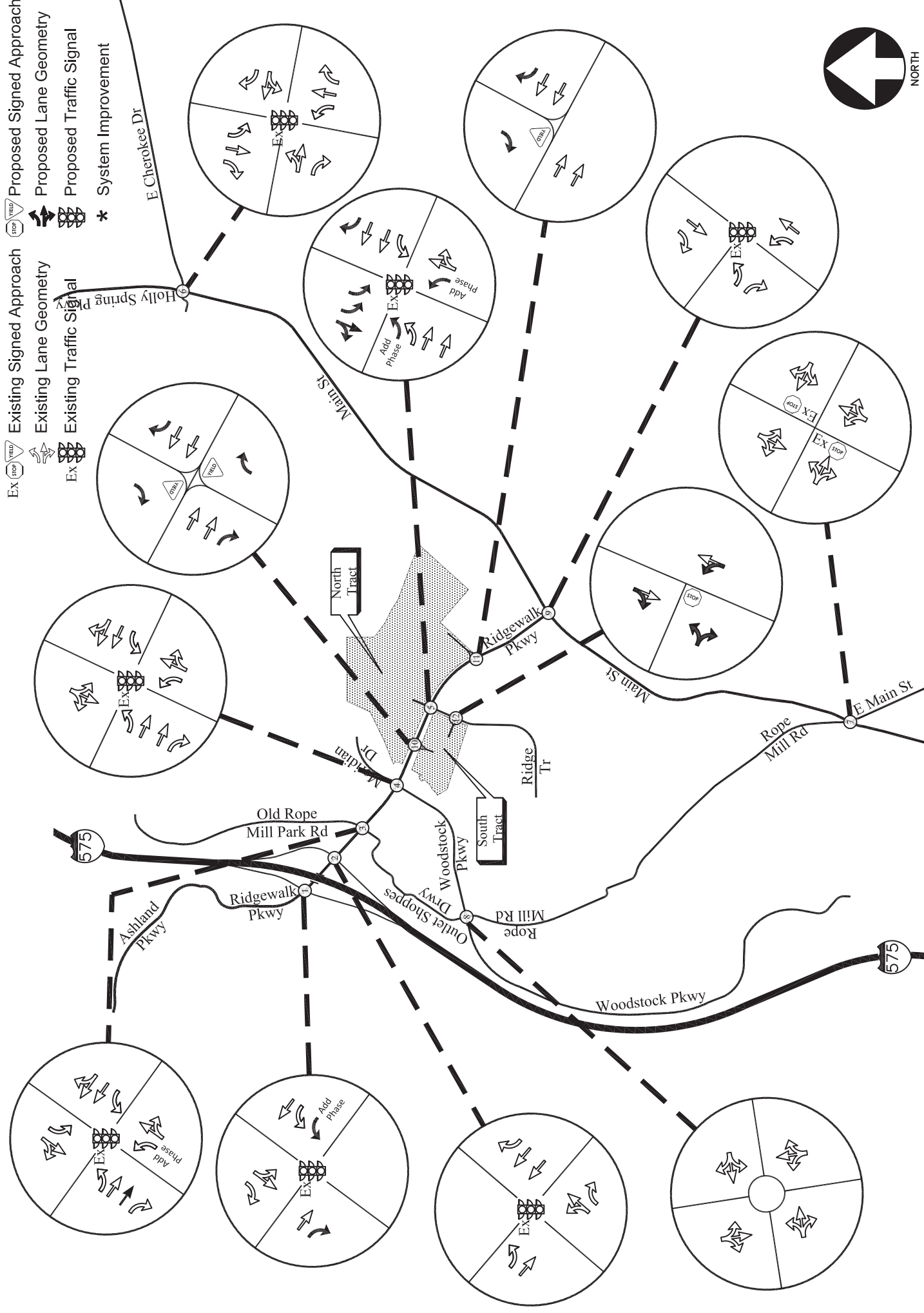
Intersection		Available Storage	Build Condition: queue length (feet)					
			NO IMPROVEMENTS			WITH SYSTEM AND SITE IMPROVEMENTS		
			AM Peak	PM Peak	SAT Peak	AM Peak	PM Peak	SAT Peak
1	<u>Ridgewalk Pkwy @ I-575 SB Ramps</u>							
	-Eastbound Through	-	111	65	106	175	157	162
	-Eastbound Right	100'	-	-	-	36	25	11
	-Westbound Left	600'	555	1181	1403	179	405	489
	-Westbound Through	600'	14	102	65	31	141	101
	-Southbound Left/Through	-	132	239	277	130	198	188
	-Southbound Right	-	8	26	15	0	1	0
2	<u>Ridgewalk Pkwy @ I-575 NB Ramps</u>							
	-Eastbound Left	500' (200')	3	3	1	0	1	12
	-Eastbound Through	600'	28	27	17	0	18	336
	-Westbound Through	-	25	108	168	40	102	70
	-Westbound Right	250'	2	2	21	4	0	6
	-Northbound Left/Through	-	56	167	129	67	167	66
	-Northbound Right	-	0	0	0	0	0	0
3	<u>Ridgewalk Pkwy @ Old Rope Mill Park Rd/ Outlet Shoppes Drwy</u>							
	-Eastbound Left	250'	17	51	76	22	54	62
	-Eastbound Through/ Right	-	145	380	690	193	297	416
	-Eastbound Right	375'	6	0	24	19	3	78
	-Westbound Left	275'	17	78	252	29	46	180
	-Westbound Through/Right	-	98	688	271	150	667	250
	-Northbound Left	-	106	405	815	98	343	599
	-Northbound Through/Right	-	0	28	58	0	29	59
	-Southbound Left	200'	35	60	54	44	84	103
	-Southbound Through/Right	-	12	121	33	13	177	71
4	<u>Ridgewalk Pkwy @ Woodstock Pkwy / Meridian Dr</u>							
	-Eastbound Left	100'	1	2	6	0	3	2
	-Eastbound Through	-	67	49	233	32	75	51
	-Eastbound Right	100'	2	1	2	0	0	0
	-Westbound Left	100'	22	24	69	12	10	73
	-Westbound Through/Right	-	32	91	80	18	155	28
	-Northbound Left	210'	78	140	54	90	140	79
	-Northbound Through/Right	-	0	0	0	0	0	0
	-Southbound Left/Through/Right	-	16	11	12	18	11	16
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Intersection		Available Storage	Build Condition: queue length (feet)					
			NO IMPROVEMENTS			WITH SYSTEM AND SITE IMPROVEMENTS		
			AM Peak	PM Peak	SAT Peak	AM Peak	PM Peak	SAT Peak
5	<u>Ridgewalk Pkwy @ Ridge Tr / Site Drwy 2</u>							
	-Eastbound Left	-	101	319	474	58	241	319
	-Eastbound Through/Right	-	239	407	307	229	398	322
	-Westbound Left	150'	34	88	161	44	49	77
	-Westbound Through	-	218	385	443	209	314	351
	-Westbound Right	100'	0	5	31	0	0	2
	-Northbound Left	150'	-	-	-	166	334	300
	-Northbound Through /Right	-	386	634	756	44	49	50
	-Southbound Left	-	47	219	267	55	139	158
-Southbound Through/Right	-	24	47	52	49	78	86	
6	<u>Main St @ E Cherokee Dr</u>							
	-Eastbound Left/Through	-	148	170	151	147	170	151
	-Eastbound Right	-	0	12	0	0	12	0
	-Westbound Left	650'	477	383	381	474	383	381
	-Westbound Through	-	218	267	247	217	267	247
	-Westbound Right	300'	62	144	68	61	144	68
	-Northbound Left	100'	17	89	69	17	89	69
	-Northbound Through	-	154	614	339	148	614	339
	-Northbound Right	255'	58	190	25	88	190	25
	-Southbound Left	330'	262	245	204	273	245	204
	-Southbound Through	-	671	279	332	675	279	332
	-Southbound Right	120'	0	0	0	0	0	0
7	<u>Main St @ Rope Mill Rd / E Main St</u>							
	-Eastbound Left/Through/Right	-	254	64	49	254	64	49
	-Westbound Left/Through/Right	-	13	23	87	13	23	87
	-Northbound Left/Through/Right	-	32	9	13	32	9	13
	-Southbound Left/Through/Right	-	1	2	3	1	2	3
9	<u>Ridgewalk Pkwy @ Main St</u>							
	-Eastbound Left	-	350	253	151	130	736	484
	-Eastbound Right	-	0	0	0	0	99	85
	-Northbound Left	200'	48	278	195	61	278	212
	-Northbound Through	-	84	356	214	109	356	192
	-Southbound Through	-	259	291	354	279	291	320
	-Southbound Right	110'	63	357	598	119	357	471
10	<u>Ridgewalk Pkwy @ Site Drwy 1 / Site Drwy 5</u>							
	-Northbound Right	-	1	12	11	1	12	10
	-Southbound Right	-	6	19	25	7	19	26
11	<u>Ridgewalk Pkwy @ Site Drwy 3</u>							
-Southbound Right	-	9	37	43	9	37	43	
12	<u>Ridge Tr @ Site Drwy 4</u>							
	-Eastbound Approach	-	6	67	62	6	67	63
	-Northbound Left	-	0	1	1	0	1	1



FUTURE (BUILD) PEAK HOUR VOLUMES



7. CONCLUSIONS AND RECOMMENDATIONS

Traffic impacts were evaluated for the added traffic from the proposed Ridgewalk Center mixed-use development that will be located along the north and south sides of Ridgewalk Parkway to the east of Woodstock Parkway / Meridian Drive in Woodstock, Georgia. The northern tract of the proposed development will consist of:

- Total Retail: 260,772 sf
- Mixed-Use Office: 5,000 sf
- Single Family Detached Housing: 23 lots
- Apartment: 320 units
- Fuel Center: 18 positions

The southern tract of the development will consist of:

- Mixed-Use Retail: 70,000 sf
- Mixed-Use Office: 30,000 sf

The development proposes one full-access and two right-in/ right-out driveways on Ridgewalk Parkway for accessing the northern part of the development, and one full-access driveway on Ridge Trail and one right-in / right-out driveway on Ridgewalk Parkway for accessing the southern portion of the development. Existing and future operations after completion of the project were analyzed at the intersections of:

- Ridgewalk Parkway at I-575 Southbound Ramps
- Ridgewalk Parkway at I-575 Northbound Ramps
- Ridgewalk Parkway at Old Rope Mill Park Road / Outlet Shoppes Driveway
- Ridgewalk Parkway at Woodstock Parkway / Meridian Drive
- Ridgewalk Parkway at Ridge Trail
- Main Street at E. Cherokee Drive / Publix Driveway
- Main Street at Rope Mill Rd / E. Main Street
- Woodstock Parkway at Rope Mill Road / Outlet Shoppes Driveway
- Ridgewalk Parkway at Main Street

The analysis included the evaluation of Future operations for “No-Build” and “Build” conditions, both of which account for increases in annual growth of through traffic. The results of the analysis are listed below:

7.1 System Recommendations and Improvements

Improvements that are identified as “System Improvements” address deficiencies that are found within the existing road network prior to any impacts from the proposed development’s added traffic. These are recommended for consideration in future local / state transportation planning.

- Ridgewalk Pkwy @ I-575 SB Ramps – Add a protected / permissive signal phase to westbound left movement

7.2 Site Access Configuration

The following access configuration was utilized when modeling the proposed site driveway intersections.

- Site Driveway #1, #3, and #5: Right-in / Right-out on Ridgewalk Parkway
 - This driveway will consist of one entering lane and one exiting lane.
 - The intersection will be unsignalized with a YIELD sign on the driveway approach to Ridgewalk Pkwy.
 - A deceleration lane will be constructed for entering right turn movements based on local standards (See Appendix).
 - Left turns will be prohibited by a raised median on Ridgewalk Parkway.
- Site Driveway #2: signalized full access driveway on Ridgewalk Parkway
 - This driveway will consist of two entering and three exiting lanes. The southbound (exiting) approach will have a dual left turn lanes and shared through / right turn lane.
 - An additional dedicated eastbound left turn bay will be constructed for entering traffic, creating dual left turn lanes.
 - A deceleration lane will be constructed for entering right turn movements traffic based on local standards (See Appendix).
- Site Driveway #4: full access driveway on Ridge Trail
 - This driveway will consist of one entering lane and one exiting lane.
 - The intersection will be unsignalized with a STOP sign on the eastbound approach.
 - Entering left turn movements will be made from the northbound through lane. No dedicated turn bay is planned.
 - Entering right turn movements will be made from the southbound through lane. No deceleration lane is planned.

7.3 Site Mitigation Improvements

Improvements that are identified as “Site Mitigation Improvements” address further impacts that are a result of the proposed development’s added traffic. *Please note that survey and construction drawings may be needed to verify the feasibility and extent of additional right-of-way required for any recommended improvements.*

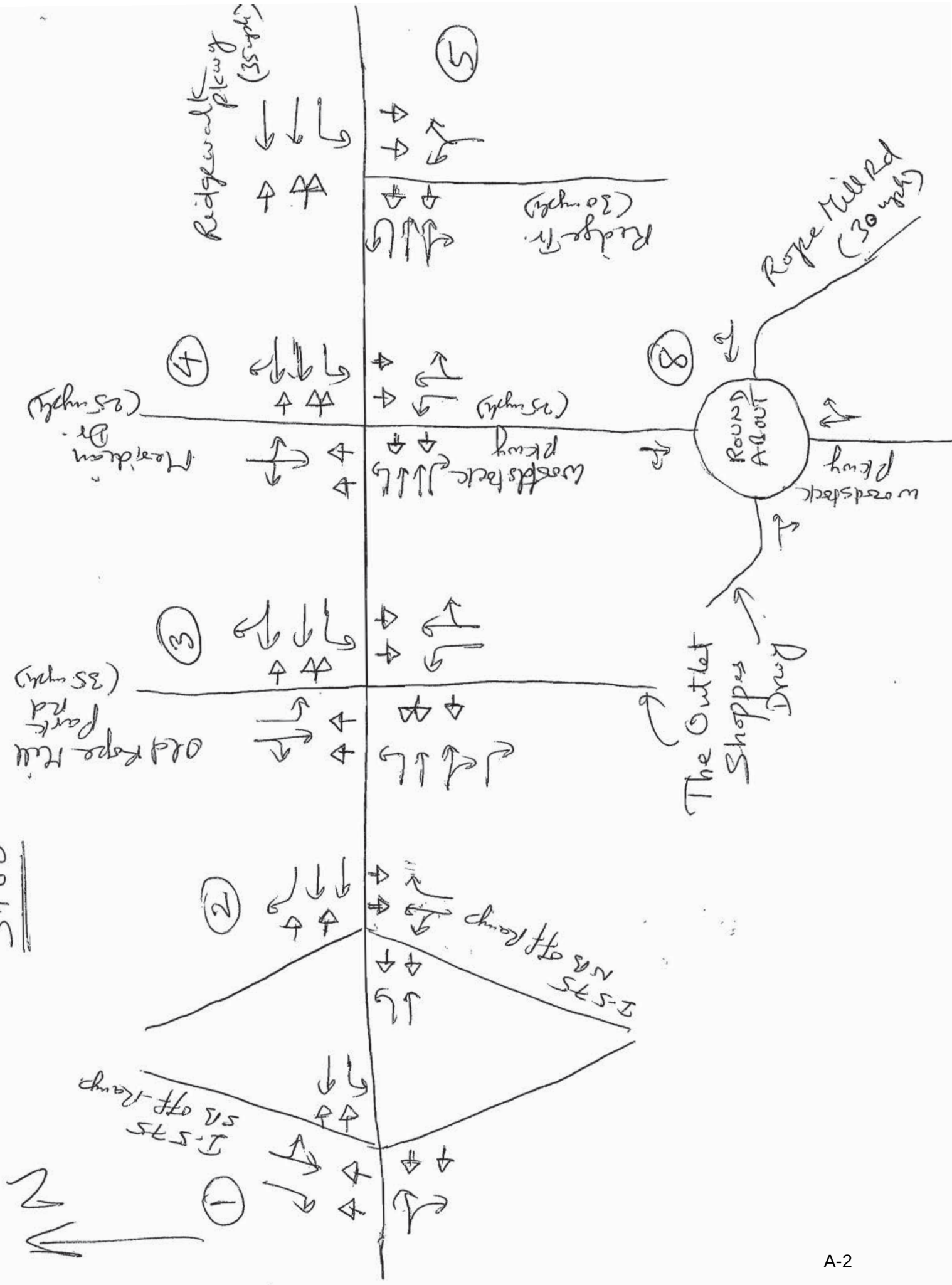
- Ridgewalk Pkwy @ I-575 SB Ramps – Add eastbound right turn lane
- Ridgewalk Pkwy @ Ridge Trail – Add a northbound left turn lane and protected / permissive signal phase
- Ridgewalk Pkwy @ Outlet Shoppes – Add northbound left turn phase to the signal
- Ridgewalk Pkwy @ Outlets Shoppes – Remove right turn from shared eastbound through/right lane

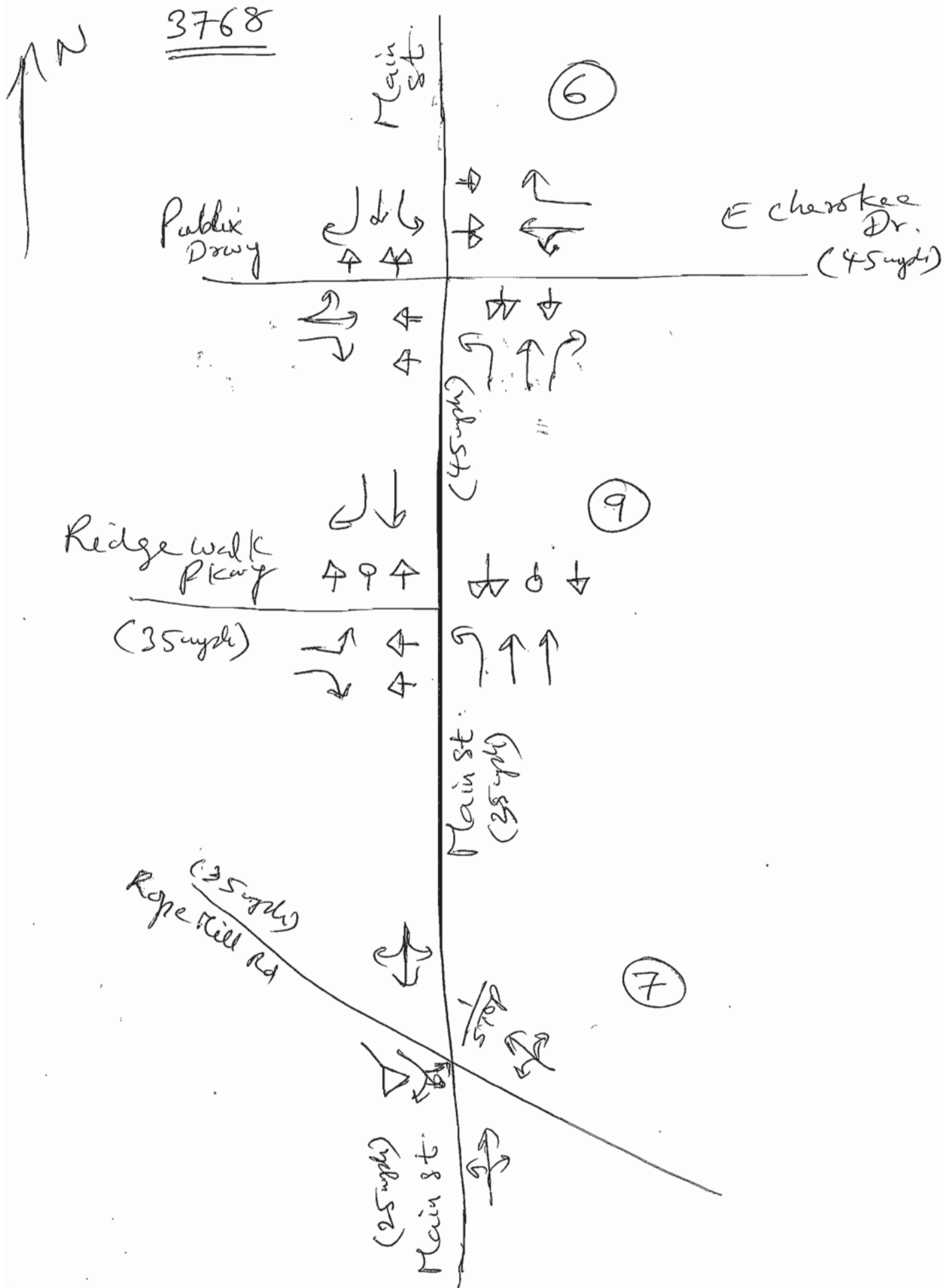
Appendix

Existing Intersection Traffic Counts	A
Seasonal Adjustment to Count Data.....	B
GRTA Letter of Understanding.....	C
Fact Sheets for Planned and Programmed Improvements.....	D
Existing Intersection Analysis.....	E
GDOT Right Turn Lane Analysis.....	F
Future “No-Build” Intersection Analysis	G
Future “No-Build” Intersection Analysis With Improvements.....	H
Future “Build” Intersections Analysis	I
Future “Build” Intersections Analysis With Improvements	J
GDOT Roundabout Analysis Sheets	K
Traffic Volume Worksheets	L

Existing Intersection Traffic Counts

3768





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Page 1

ADT Data

Site Code: 37660101
Ridgewalk Pkwy West of Main St

Start Time	11-Nov-15 Wed	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		8	125			7	114				
12:15		6	160			8	121				
12:30		5	118			2	131				
12:45		7	123	26	526	4	114	21	480	47	1006
01:00		5	140			5	106				
01:15		4	134			2	95				
01:30		4	133			1	128				
01:45		8	140	21	547	4	102	12	431	33	978
02:00		7	107			4	94				
02:15		5	145			1	106				
02:30		1	113			3	116				
02:45		0	131	13	496	0	111	8	427	21	923
03:00		0	127			3	138				
03:15		4	132			6	121				
03:30		4	160			26	111				
03:45		2	130	10	549	6	138	41	508	51	1057
04:00		4	150			2	146				
04:15		7	153			8	140				
04:30		6	167			31	186				
04:45		14	170	31	640	21	164	62	636	93	1276
05:00		12	176			25	223				
05:15		15	147			38	184				
05:30		26	176			56	186				
05:45		47	183	100	682	58	157	177	750	277	1432
06:00		49	166			61	156				
06:15		82	165			57	163				
06:30		93	153			60	130				
06:45		131	120	355	604	98	138	276	587	631	1191
07:00		111	135			105	109				
07:15		128	115			122	106				
07:30		137	111			118	93				
07:45		156	93	532	454	97	72	442	380	974	834
08:00		120	98			99	58				
08:15		118	61			104	74				
08:30		107	72			104	68				
08:45		112	67	457	298	113	47	420	247	877	545
09:00		97	57			93	42				
09:15		92	77			116	43				
09:30		93	49			104	41				
09:45		88	51	370	234	104	22	417	148	787	382
10:00		77	42			109	30				
10:15		86	32			111	21				
10:30		84	32			104	17				
10:45		73	20	320	126	93	22	417	90	737	216
11:00		85	14			105	13				
11:15		100	15			108	9				
11:30		101	8			92	8				
11:45		100	11	386	48	131	9	436	39	822	87
Total		2621	5204			2729	4723			5350	9927
Percent		33.5%	66.5%			36.6%	63.4%			35.0%	65.0%
Grand Total		2621	5204			2729	4723			5350	9927
Percent		33.5%	66.5%			36.6%	63.4%			35.0%	65.0%

ADT

ADT 15,277

AADT 15,277

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TMC Data
Ridgewalk Pkwy @ I-575 SB Off-Ramp
7-9am | 4-6pm

File Name : 37680001
Site Code : 37680001
Start Date : 11/17/2015
Page No : 1

Groups Printed- Cars, Buses, Trucks

	Northbound					I-575 SB Off-Ramp Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	67	1	4	0	72	0	40	32	0	72	74	13	0	0	87	231
07:15 AM	0	0	0	0	0	73	0	6	0	79	0	55	28	0	83	122	19	0	0	141	303
07:30 AM	0	0	0	0	0	95	1	4	0	100	0	46	46	0	92	107	29	0	0	136	328
07:45 AM	0	0	0	0	0	104	2	10	0	116	0	28	32	0	60	85	21	0	0	106	282
Total	0	0	0	0	0	339	4	24	0	367	0	169	138	0	307	388	82	0	0	470	1144
08:00 AM	0	0	0	0	0	83	0	4	0	87	0	30	32	0	62	97	15	0	0	112	261
08:15 AM	0	0	0	0	0	54	5	2	0	61	0	32	27	0	59	100	14	0	0	114	234
08:30 AM	0	0	0	0	0	39	0	5	0	44	0	23	23	0	46	93	12	0	0	105	195
08:45 AM	0	0	0	0	0	36	2	3	0	41	0	17	20	0	37	86	19	0	0	105	183
Total	0	0	0	0	0	212	7	14	0	233	0	102	102	0	204	376	60	0	0	436	873
*** BREAK ***																					
04:00 PM	0	0	0	0	0	43	0	7	0	50	0	17	25	0	42	130	39	0	0	169	261
04:15 PM	0	0	0	0	0	50	0	6	0	56	0	19	18	0	37	137	25	0	0	162	255
04:30 PM	0	0	0	0	0	64	1	12	0	77	0	20	12	0	32	154	59	0	0	213	322
04:45 PM	0	0	0	0	0	51	0	5	0	56	0	32	14	0	46	147	51	0	0	198	300
Total	0	0	0	0	0	208	1	30	0	239	0	88	69	0	157	568	174	0	0	742	1138
05:00 PM	0	0	0	0	0	43	0	8	0	51	0	28	15	0	43	171	63	0	0	234	328
05:15 PM	0	0	0	0	0	59	1	12	0	72	0	18	22	0	40	156	49	0	0	205	317
05:30 PM	0	0	0	0	0	52	0	9	0	61	0	16	24	0	40	143	64	0	0	207	308
05:45 PM	0	0	0	0	0	62	0	9	0	71	0	19	30	0	49	136	57	0	0	193	313
Total	0	0	0	0	0	216	1	38	0	255	0	81	91	0	172	606	233	0	0	839	1266
Grand Total	0	0	0	0	0	975	13	106	0	1094	0	440	400	0	840	1938	549	0	0	2487	4421
Apprch %	0	0	0	0		89.1	1.2	9.7	0		0	52.4	47.6	0		77.9	22.1	0	0		
Total %	0	0	0	0	0	22.1	0.3	2.4	0	24.7	0	10	9	0	19	43.8	12.4	0	0	56.3	

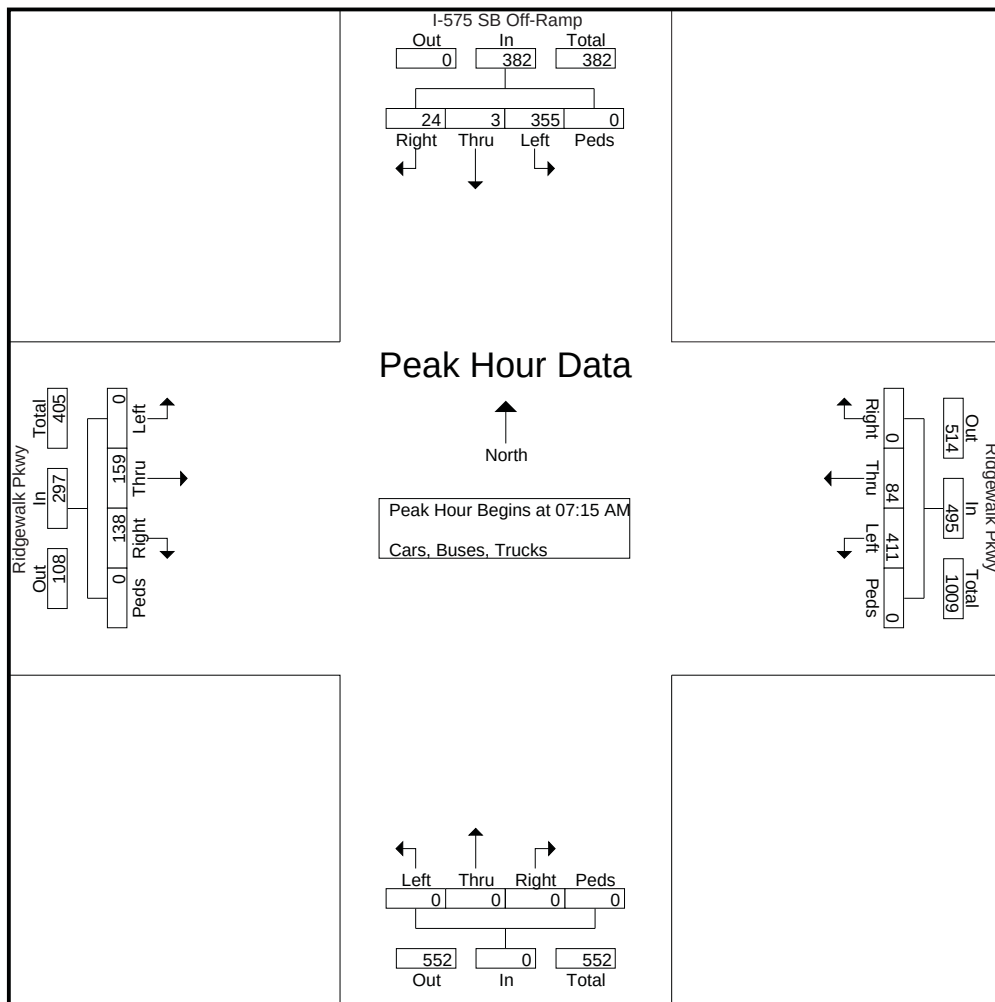
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TMC Data
Ridgewalk Pkwy @ I-575 SB Off-Ramp
7-9am | 4-6pm

File Name : 37680001
Site Code : 37680001
Start Date : 11/17/2015
Page No : 2

	Northbound					I-575 SB Off-Ramp Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	0	0	0	73	0	6	0	79	0	55	28	0	83	122	19	0	0	141	303
07:30 AM	0	0	0	0	0	95	1	4	0	100	0	46	46	0	92	107	29	0	0	136	328
07:45 AM	0	0	0	0	0	104	2	10	0	116	0	28	32	0	60	85	21	0	0	106	282
08:00 AM	0	0	0	0	0	83	0	4	0	87	0	30	32	0	62	97	15	0	0	112	261
Total Volume	0	0	0	0	0	355	3	24	0	382	0	159	138	0	297	411	84	0	0	495	1174
% App. Total	0	0	0	0	0	92.9	0.8	6.3	0		0	53.5	46.5	0		83	17	0	0		
PHF	.000	.000	.000	.000	.000	.853	.375	.600	.000	.823	.000	.723	.750	.000	.807	.842	.724	.000	.000	.878	.895



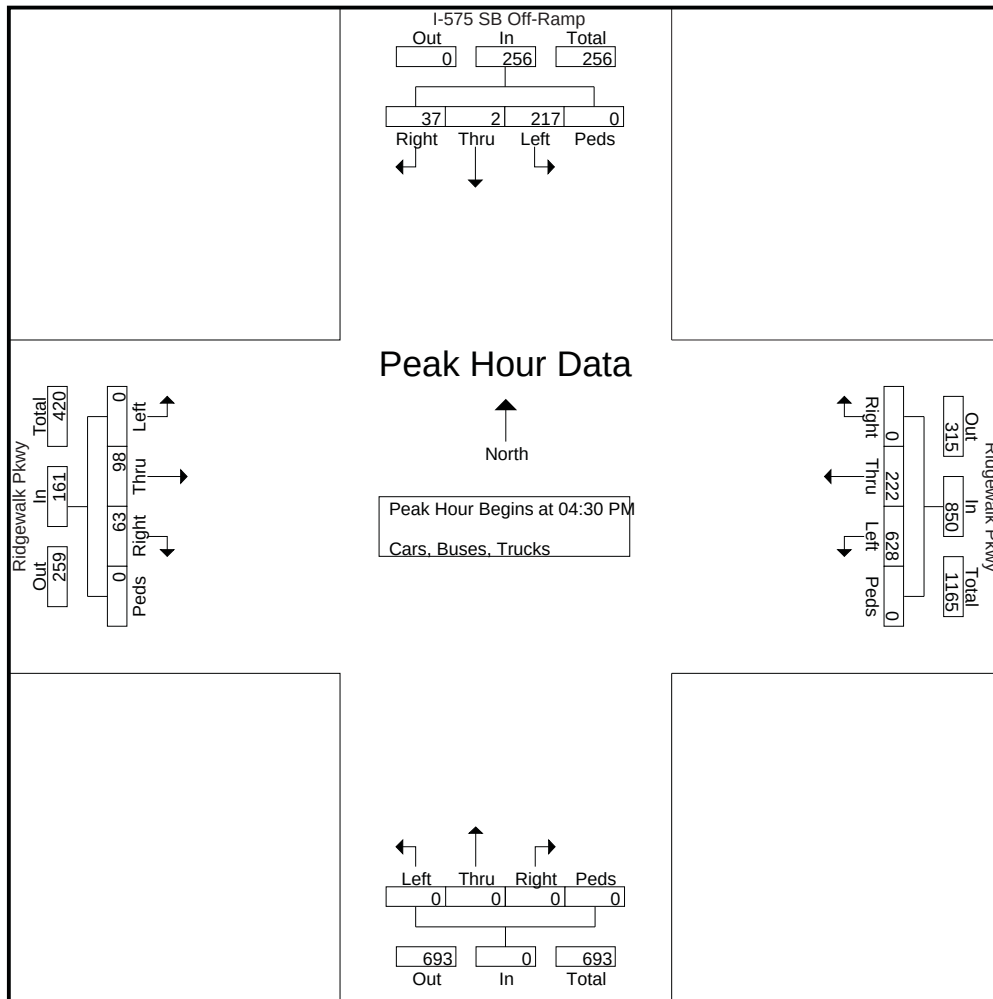
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TMC Data
Ridgewalk Pkwy @ I-575 SB Off-Ramp
7-9am | 4-6pm

File Name : 37680001
Site Code : 37680001
Start Date : 11/17/2015
Page No : 3

	Northbound					I-575 SB Off-Ramp Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	64	1	12	0	77	0	20	12	0	32	154	59	0	0	213	322
04:45 PM	0	0	0	0	0	51	0	5	0	56	0	32	14	0	46	147	51	0	0	198	300
05:00 PM	0	0	0	0	0	43	0	8	0	51	0	28	15	0	43	171	63	0	0	234	328
05:15 PM	0	0	0	0	0	59	1	12	0	72	0	18	22	0	40	156	49	0	0	205	317
Total Volume	0	0	0	0	0	217	2	37	0	256	0	98	63	0	161	628	222	0	0	850	1267
% App. Total	0	0	0	0	0	84.8	0.8	14.5	0		0	60.9	39.1	0		73.9	26.1	0	0		
PHF	.000	.000	.000	.000	.000	.848	.500	.771	.000	.831	.000	.766	.716	.000	.875	.918	.881	.000	.000	.908	.966



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TMC Data
Ridgewalk Pkwy @ I-575 NB Off-Ramp
7-9am | 4-6pm

File Name : 37680002
Site Code : 37680002
Start Date : 11/17/2015
Page No : 1

Groups Printed- Cars, Buses, Trucks

	I-575 NB Off-Ramp Northbound					Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	2	0	84	0	86	0	0	0	0	0	11	98	0	0	109	0	88	29	0	117	312
07:15 AM	8	0	102	0	110	0	0	0	0	0	9	119	0	0	128	0	137	46	0	183	421
07:30 AM	13	0	79	0	92	0	0	0	0	0	15	124	0	0	139	0	123	49	0	172	403
07:45 AM	10	0	80	0	90	0	0	0	0	0	13	114	0	0	127	0	81	34	0	115	332
Total	33	0	345	0	378	0	0	0	0	0	48	455	0	0	503	0	429	158	0	587	1468
08:00 AM	10	0	97	0	107	0	0	0	0	0	6	111	0	0	117	0	111	31	0	142	366
08:15 AM	8	0	74	0	82	0	0	0	0	0	5	85	0	0	90	0	105	41	0	146	318
08:30 AM	4	0	70	0	74	0	0	0	0	0	4	56	0	0	60	0	100	32	0	132	266
08:45 AM	8	0	92	0	100	0	0	0	0	0	4	52	0	0	56	0	99	34	0	133	289
Total	30	0	333	0	363	0	0	0	0	0	19	304	0	0	323	0	415	138	0	553	1239
*** BREAK ***																					
04:00 PM	19	0	136	0	155	0	0	0	0	0	6	62	0	0	68	0	146	69	0	215	438
04:15 PM	15	0	126	0	141	0	0	0	0	0	7	66	0	0	73	0	148	74	0	222	436
04:30 PM	33	0	126	0	159	0	0	0	0	0	4	69	0	0	73	0	185	99	0	284	516
04:45 PM	27	0	128	0	155	0	0	0	0	0	13	77	0	0	90	0	166	81	0	247	492
Total	94	0	516	0	610	0	0	0	0	0	30	274	0	0	304	0	645	323	0	968	1882
05:00 PM	36	0	132	0	168	0	0	0	0	0	12	57	0	0	69	0	186	100	0	286	523
05:15 PM	23	0	120	0	143	0	0	0	0	0	4	73	0	0	77	0	188	103	0	291	511
05:30 PM	34	0	122	0	156	0	0	0	0	0	6	58	0	0	64	0	172	92	0	264	484
05:45 PM	26	0	122	0	148	0	0	0	0	0	10	68	0	0	78	0	167	81	0	248	474
Total	119	0	496	0	615	0	0	0	0	0	32	256	0	0	288	0	713	376	0	1089	1992
Grand Total	276	0	1690	0	1966	0	0	0	0	0	129	1289	0	0	1418	0	2202	995	0	3197	6581
Apprch %	14	0	86	0		0	0	0	0		9.1	90.9	0	0		0	68.9	31.1	0		
Total %	4.2	0	25.7	0	29.9	0	0	0	0	0	2	19.6	0	0	21.5	0	33.5	15.1	0	48.6	

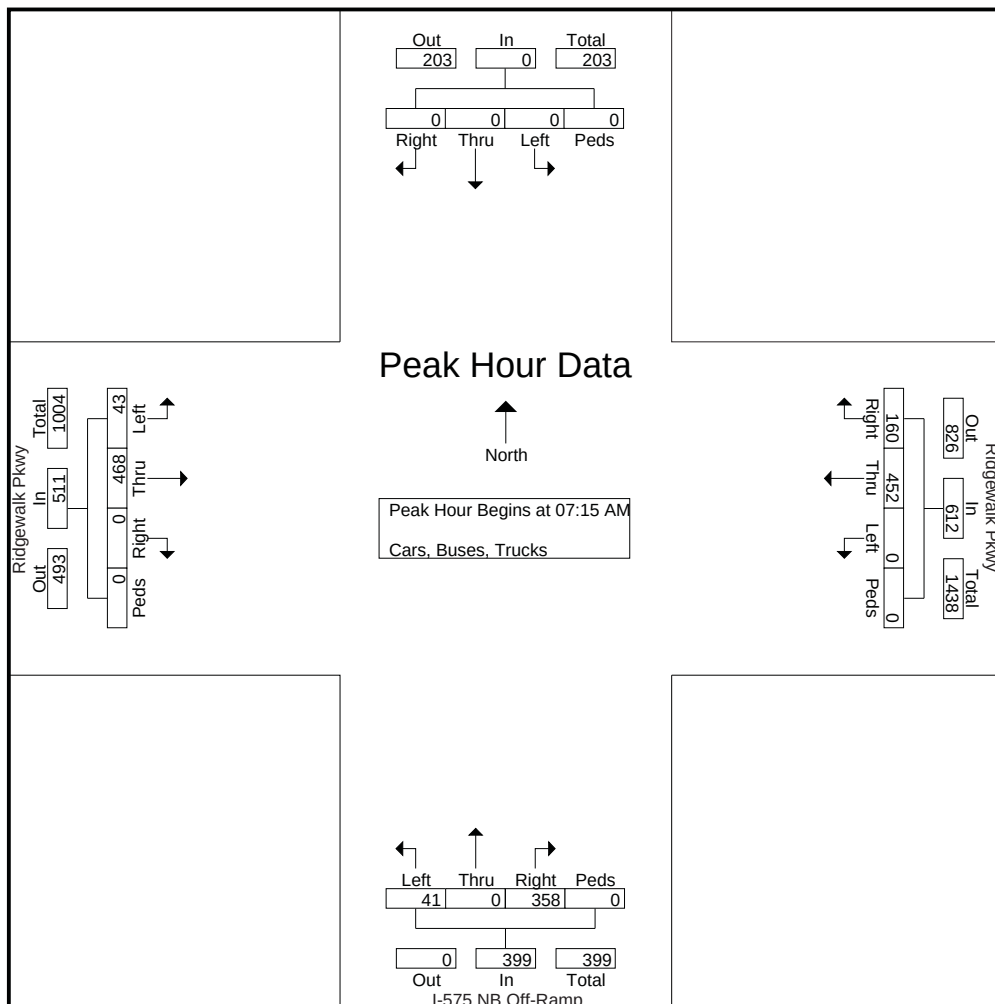
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TMC Data
Ridgewalk Pkwy @ I-575 NB Off-Ramp
7-9am | 4-6pm

File Name : 37680002
Site Code : 37680002
Start Date : 11/17/2015
Page No : 2

	I-575 NB Off-Ramp Northbound					Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	8	0	102	0	110	0	0	0	0	0	9	119	0	0	128	0	137	46	0	183	421
07:30 AM	13	0	79	0	92	0	0	0	0	0	15	124	0	0	139	0	123	49	0	172	403
07:45 AM	10	0	80	0	90	0	0	0	0	0	13	114	0	0	127	0	81	34	0	115	332
08:00 AM	10	0	97	0	107	0	0	0	0	0	6	111	0	0	117	0	111	31	0	142	366
Total Volume	41	0	358	0	399	0	0	0	0	0	43	468	0	0	511	0	452	160	0	612	1522
% App. Total	10.3	0	89.7	0		0	0	0	0		8.4	91.6	0	0		0	73.9	26.1	0		
PHF	.788	.000	.877	.000	.907	.000	.000	.000	.000	.000	.717	.944	.000	.000	.919	.000	.825	.816	.000	.836	.904



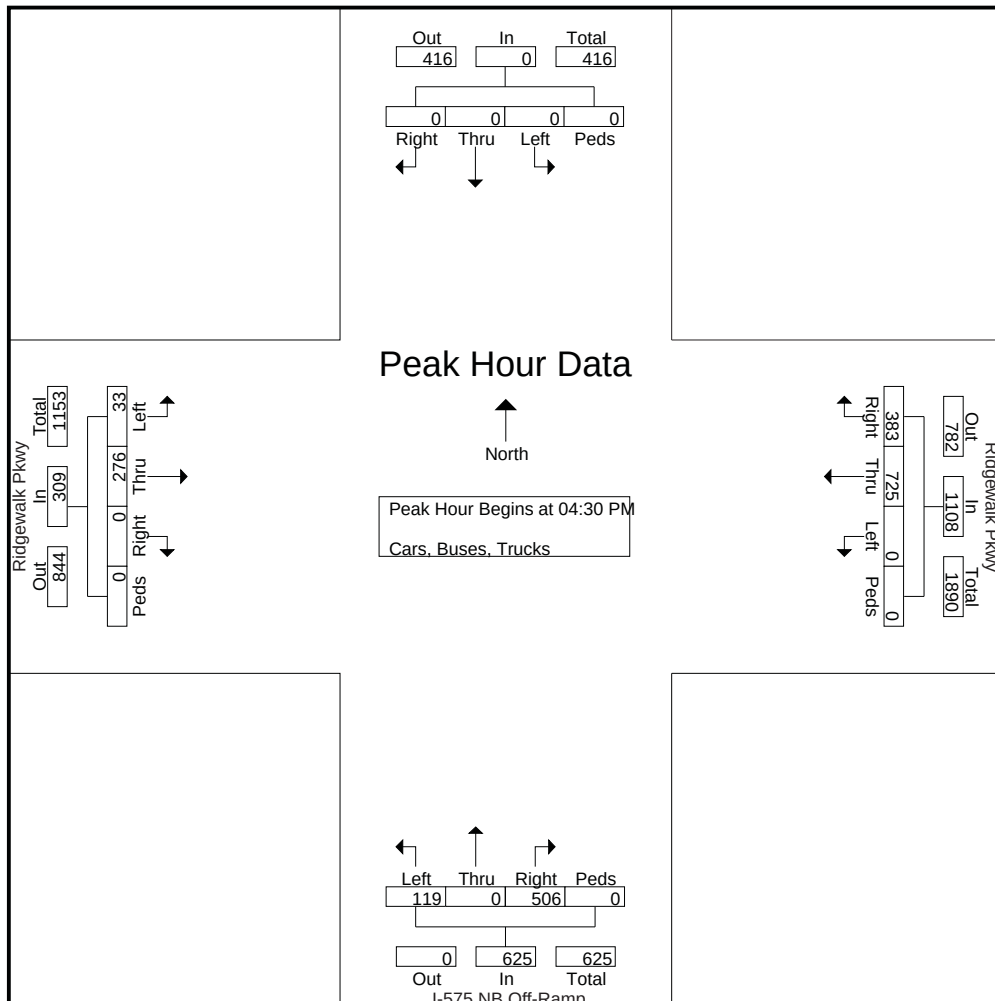
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TMC Data
Ridgewalk Pkwy @ I-575 NB Off-Ramp
7-9am | 4-6pm

File Name : 37680002
Site Code : 37680002
Start Date : 11/17/2015
Page No : 3

	I-575 NB Off-Ramp Northbound					Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	33	0	126	0	159	0	0	0	0	0	4	69	0	0	73	0	185	99	0	284	516
04:45 PM	27	0	128	0	155	0	0	0	0	0	13	77	0	0	90	0	166	81	0	247	492
05:00 PM	36	0	132	0	168	0	0	0	0	0	12	57	0	0	69	0	186	100	0	286	523
05:15 PM	23	0	120	0	143	0	0	0	0	0	4	73	0	0	77	0	188	103	0	291	511
Total Volume	119	0	506	0	625	0	0	0	0	0	33	276	0	0	309	0	725	383	0	1108	2042
% App. Total	19	0	81	0		0	0	0	0		10.7	89.3	0	0		0	65.4	34.6	0		
PHF	.826	.000	.958	.000	.930	.000	.000	.000	.000	.000	.635	.896	.000	.000	.858	.000	.964	.930	.000	.952	.976



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TMC Data
Ridgewalk Pkwy @ Old Rope Mill Park Rd/
The Outlet Shoppes Drwy
7-9am | 4-6pm

File Name : 37680003
Site Code : 37680003
Start Date : 11/17/2015
Page No : 1

Groups Printed- Cars, Buses, Trucks

	The Outlet Shoppes Drwy Northbound					Old Rope Mill Park Rd Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	19	0	23	0	42	14	4	20	0	38	19	126	35	0	180	9	85	20	0	114	374
07:15 AM	31	0	8	0	39	10	3	17	0	30	21	147	44	0	212	9	127	19	0	155	436
07:30 AM	30	0	15	0	45	8	1	14	0	23	10	150	45	0	205	18	121	8	0	147	420
07:45 AM	22	1	13	0	36	5	5	14	0	24	14	138	57	0	209	18	91	9	0	118	387
Total	102	1	59	0	162	37	13	65	0	115	64	561	181	0	806	54	424	56	0	534	1617
08:00 AM	22	4	15	0	41	6	1	14	0	21	24	122	56	0	202	13	96	6	0	115	379
08:15 AM	36	1	21	0	58	7	4	12	0	23	12	108	40	0	160	7	102	10	0	119	360
08:30 AM	29	0	14	0	43	10	4	9	0	23	16	69	44	0	129	17	98	11	0	126	321
08:45 AM	32	2	14	0	48	7	1	13	0	21	13	87	52	0	152	7	86	8	0	101	322
Total	119	7	64	0	190	30	10	48	0	88	65	386	192	0	643	44	382	35	0	461	1382
*** BREAK ***																					
04:00 PM	62	9	20	0	91	8	1	29	0	38	19	124	57	0	200	14	130	9	0	153	482
04:15 PM	65	5	24	0	94	8	2	32	0	42	16	120	53	0	189	21	111	10	0	142	467
04:30 PM	59	7	11	0	77	15	5	70	0	90	16	135	66	0	217	17	178	11	0	206	590
04:45 PM	70	7	28	0	105	12	3	29	0	44	15	128	59	0	202	23	139	14	0	176	527
Total	256	28	83	0	367	43	11	160	0	214	66	507	235	0	808	75	558	44	0	677	2066
05:00 PM	63	1	19	0	83	15	3	34	0	52	16	138	43	0	197	13	192	25	0	230	562
05:15 PM	64	4	29	0	97	10	3	36	0	49	17	124	64	0	205	16	194	13	0	223	574
05:30 PM	65	5	33	0	103	12	4	19	0	35	11	122	44	0	177	18	161	17	0	196	511
05:45 PM	82	4	19	0	105	9	1	24	0	34	14	117	52	0	183	13	147	6	0	166	488
Total	274	14	100	0	388	46	11	113	0	170	58	501	203	0	762	60	694	61	0	815	2135
Grand Total	751	50	306	0	1107	156	45	386	0	587	253	1955	811	0	3019	233	2058	196	0	2487	7200
Apprch %	67.8	4.5	27.6	0		26.6	7.7	65.8	0		8.4	64.8	26.9	0		9.4	82.8	7.9	0		
Total %	10.4	0.7	4.2	0	15.4	2.2	0.6	5.4	0	8.2	3.5	27.2	11.3	0	41.9	3.2	28.6	2.7	0	34.5	

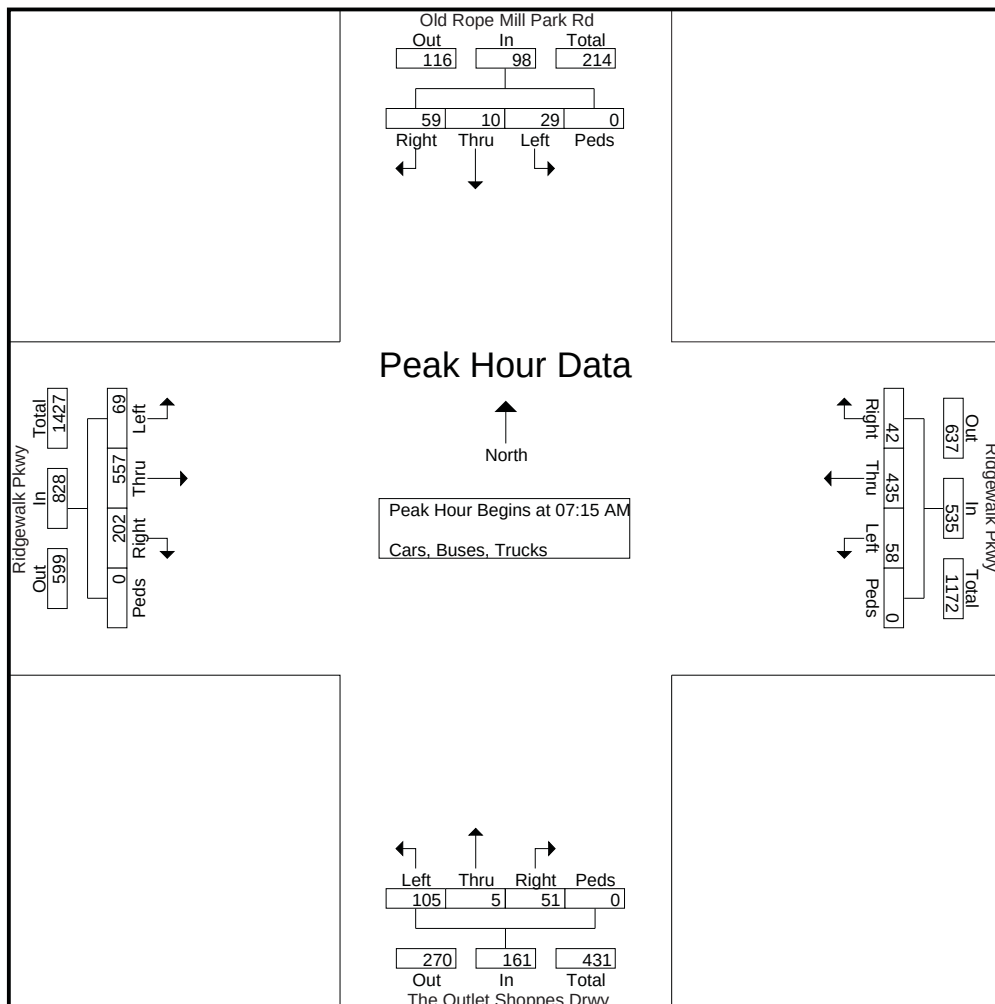
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TMC Data
Ridgewalk Pkwy @ Old Rope Mill Park Rd/
The Outlet Shoppes Drwy
7-9am | 4-6pm

File Name : 37680003
Site Code : 37680003
Start Date : 11/17/2015
Page No : 2

	The Outlet Shoppes Drwy Northbound					Old Rope Mill Park Rd Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	31	0	8	0	39	10	3	17	0	30	21	147	44	0	212	9	127	19	0	155	436
07:30 AM	30	0	15	0	45	8	1	14	0	23	10	150	45	0	205	18	121	8	0	147	420
07:45 AM	22	1	13	0	36	5	5	14	0	24	14	138	57	0	209	18	91	9	0	118	387
08:00 AM	22	4	15	0	41	6	1	14	0	21	24	122	56	0	202	13	96	6	0	115	379
Total Volume	105	5	51	0	161	29	10	59	0	98	69	557	202	0	828	58	435	42	0	535	1622
% App. Total	65.2	3.1	31.7	0		29.6	10.2	60.2	0		8.3	67.3	24.4	0		10.8	81.3	7.9	0		
PHF	.847	.313	.850	.000	.894	.725	.500	.868	.000	.817	.719	.928	.886	.000	.976	.806	.856	.553	.000	.863	.930



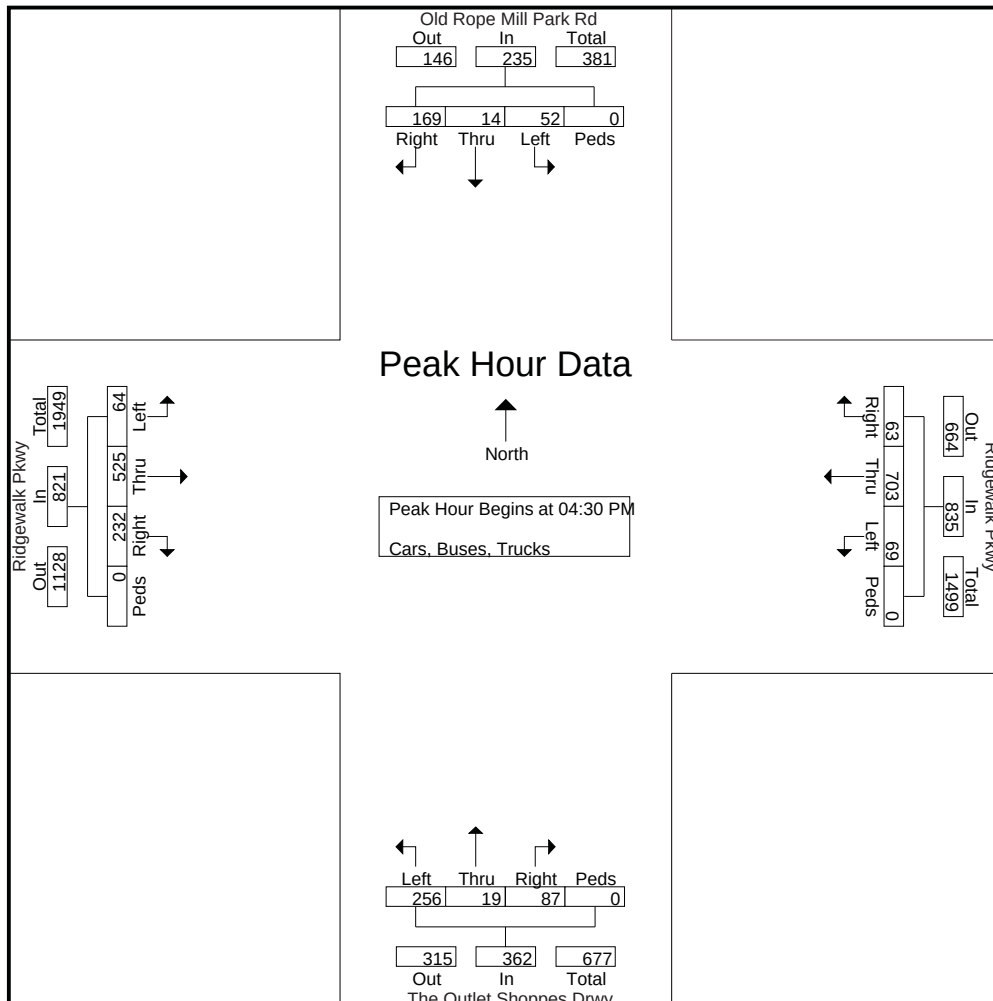
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TMC Data
Ridgewalk Pkwy @ Old Rope Mill Park Rd/
The Outlet Shoppes Drwy
7-9am | 4-6pm

File Name : 37680003
Site Code : 37680003
Start Date : 11/17/2015
Page No : 3

	The Outlet Shoppes Drwy Northbound					Old Rope Mill Park Rd Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	59	7	11	0	77	15	5	70	0	90	16	135	66	0	217	17	178	11	0	206	590
04:45 PM	70	7	28	0	105	12	3	29	0	44	15	128	59	0	202	23	139	14	0	176	527
05:00 PM	63	1	19	0	83	15	3	34	0	52	16	138	43	0	197	13	192	25	0	230	562
05:15 PM	64	4	29	0	97	10	3	36	0	49	17	124	64	0	205	16	194	13	0	223	574
Total Volume	256	19	87	0	362	52	14	169	0	235	64	525	232	0	821	69	703	63	0	835	2253
% App. Total	70.7	5.2	24	0		22.1	6	71.9	0		7.8	63.9	28.3	0		8.3	84.2	7.5	0		
PHF	.914	.679	.750	.000	.862	.867	.700	.604	.000	.653	.941	.951	.879	.000	.946	.750	.906	.630	.000	.908	.955



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TMC Data
Ridgewalk Pkwy @ Woodstock Pkwy/
Meridian Dr
7-9am I 4-6pm

File Name : 37680004
Site Code : 37680004
Start Date : 11/17/2015
Page No : 1

Groups Printed- Cars, Buses, Trucks

	Woodstock Pkwy Northbound					Meridian Dr Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	17	1	13	0	31	1	2	0	0	3	0	119	44	0	163	52	98	0	0	150	347
07:15 AM	22	0	20	0	42	0	1	1	0	2	0	112	50	0	162	55	122	1	0	178	384
07:30 AM	26	0	35	0	61	1	1	3	0	5	0	124	45	0	169	43	116	0	0	159	394
07:45 AM	13	1	14	0	28	0	1	2	0	3	1	108	46	0	155	49	106	0	0	155	341
Total	78	2	82	0	162	2	5	6	0	13	1	463	185	0	649	199	442	1	0	642	1466
08:00 AM	8	0	13	0	21	0	0	2	0	2	1	111	30	0	142	36	104	1	0	141	306
08:15 AM	5	0	9	0	14	2	0	7	0	9	0	111	21	0	132	25	107	0	0	132	287
08:30 AM	4	0	16	0	20	1	2	1	0	4	0	93	13	0	106	20	115	0	0	135	265
08:45 AM	7	0	11	0	18	1	0	2	0	3	0	95	7	0	102	22	96	0	0	118	241
Total	24	0	49	0	73	4	2	12	0	18	1	410	71	0	482	103	422	1	0	526	1099
*** BREAK ***																					
04:00 PM	23	3	23	0	49	1	0	2	0	3	3	137	12	0	152	17	127	0	0	144	348
04:15 PM	23	1	34	0	58	2	0	4	0	6	4	139	9	0	152	15	118	1	0	134	350
04:30 PM	22	0	35	0	57	0	0	1	0	1	0	142	15	0	157	24	176	2	0	202	417
04:45 PM	24	0	35	0	59	0	1	1	0	2	1	161	19	0	181	22	161	1	0	184	426
Total	92	4	127	0	223	3	1	8	0	12	8	579	55	0	642	78	582	4	0	664	1541
05:00 PM	23	4	43	0	70	0	0	1	0	1	5	158	13	0	176	20	209	1	0	230	477
05:15 PM	29	1	55	0	85	0	0	3	0	3	2	140	19	0	161	19	184	3	0	206	455
05:30 PM	31	2	46	0	79	1	1	0	0	2	2	161	6	0	169	27	165	0	0	192	442
05:45 PM	20	4	37	0	61	2	2	3	0	7	3	129	17	0	149	17	142	2	0	161	378
Total	103	11	181	0	295	3	3	7	0	13	12	588	55	0	655	83	700	6	0	789	1752
Grand Total	297	17	439	0	753	12	11	33	0	56	22	2040	366	0	2428	463	2146	12	0	2621	5858
Apprch %	39.4	2.3	58.3	0		21.4	19.6	58.9	0		0.9	84	15.1	0		17.7	81.9	0.5	0		
Total %	5.1	0.3	7.5	0	12.9	0.2	0.2	0.6	0	1	0.4	34.8	6.2	0	41.4	7.9	36.6	0.2	0	44.7	

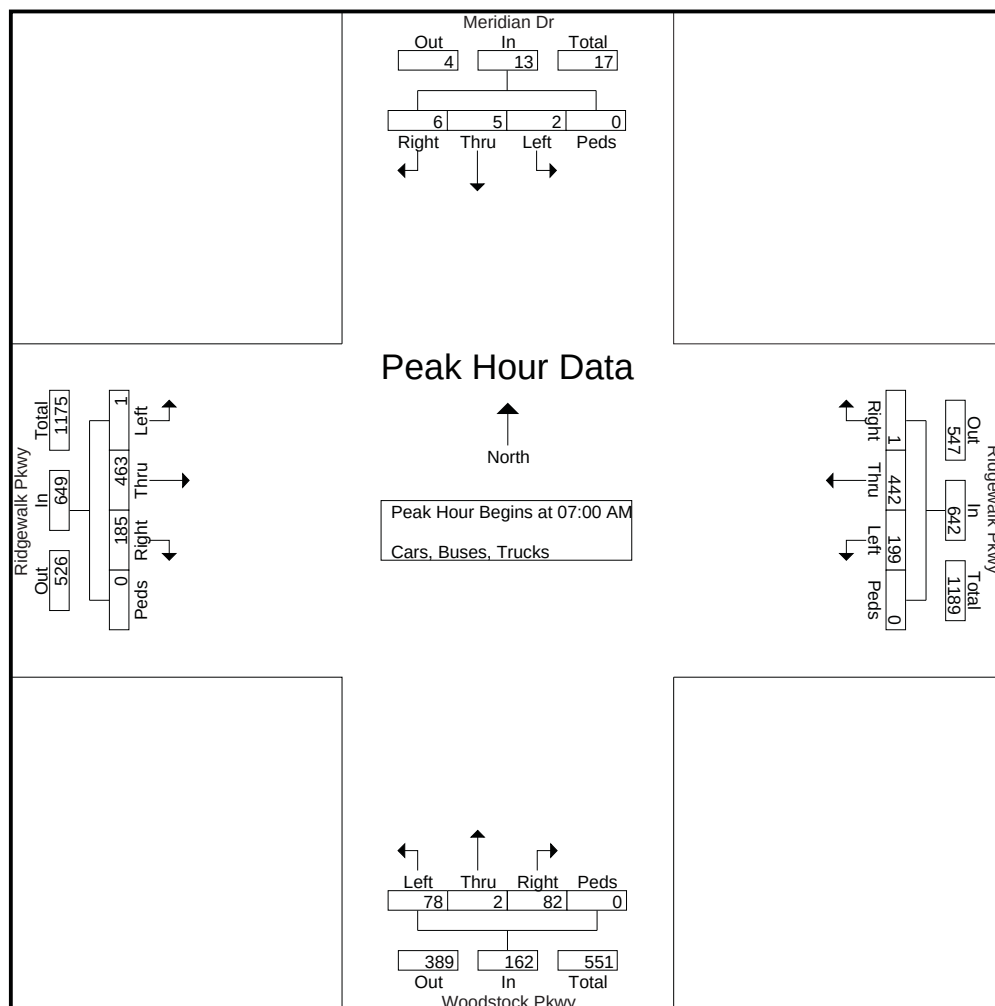
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TMC Data
Ridgewalk Pkwy @ Woodstock Pkwy/
Meridian Dr
7-9am I 4-6pm

File Name : 37680004
Site Code : 37680004
Start Date : 11/17/2015
Page No : 2

	Woodstock Pkwy Northbound					Meridian Dr Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	17	1	13	0	31	1	2	0	0	3	0	119	44	0	163	52	98	0	0	150	347
07:15 AM	22	0	20	0	42	0	1	1	0	2	0	112	50	0	162	55	122	1	0	178	384
07:30 AM	26	0	35	0	61	1	1	3	0	5	0	124	45	0	169	43	116	0	0	159	394
07:45 AM	13	1	14	0	28	0	1	2	0	3	1	108	46	0	155	49	106	0	0	155	341
Total Volume	78	2	82	0	162	2	5	6	0	13	1	463	185	0	649	199	442	1	0	642	1466
% App. Total	48.1	1.2	50.6	0		15.4	38.5	46.2	0		0.2	71.3	28.5	0		31	68.8	0.2	0		
PHF	.750	.500	.586	.000	.664	.500	.625	.500	.000	.650	.250	.933	.925	.000	.960	.905	.906	.250	.000	.902	.930



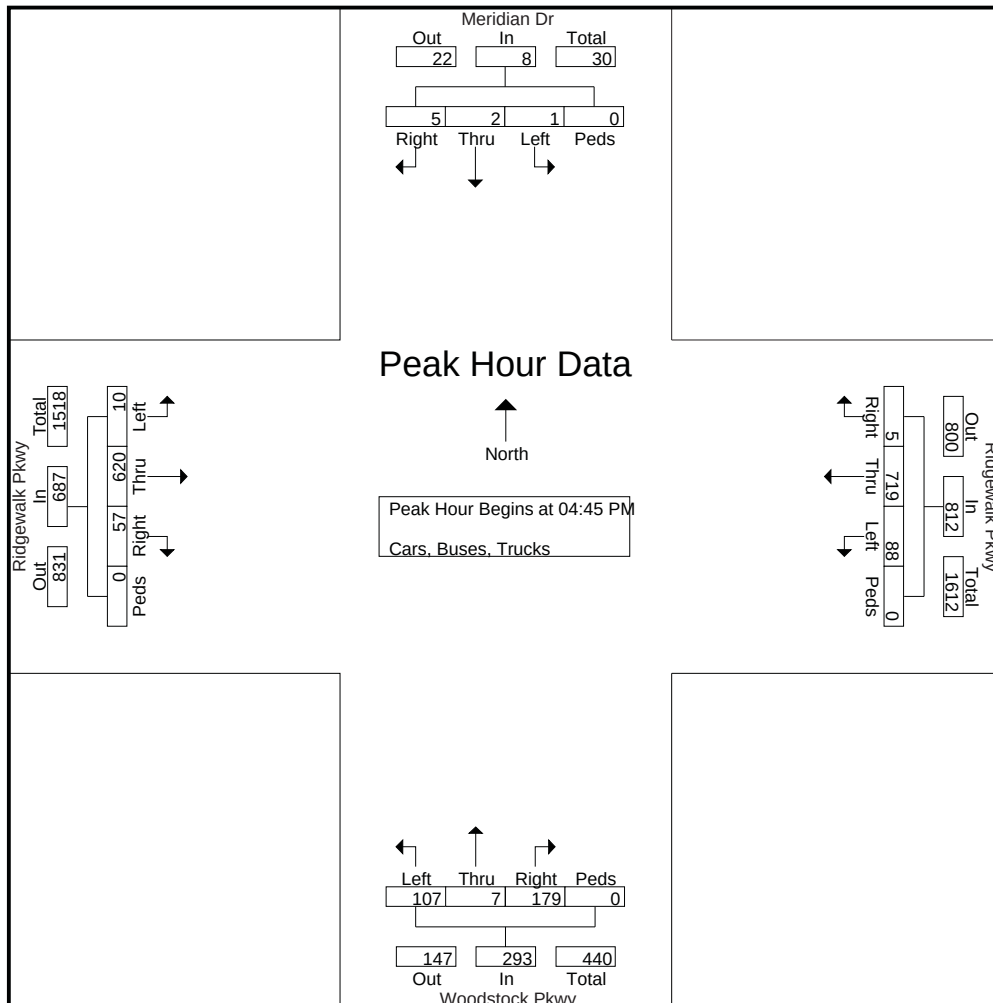
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TMC Data
Ridgewalk Pkwy @ Woodstock Pkwy/
Meridian Dr
7-9am I 4-6pm

File Name : 37680004
Site Code : 37680004
Start Date : 11/17/2015
Page No : 3

	Woodstock Pkwy Northbound					Meridian Dr Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	24	0	35	0	59	0	1	1	0	2	1	161	19	0	181	22	161	1	0	184	426
05:00 PM	23	4	43	0	70	0	0	1	0	1	5	158	13	0	176	20	209	1	0	230	477
05:15 PM	29	1	55	0	85	0	0	3	0	3	2	140	19	0	161	19	184	3	0	206	455
05:30 PM	31	2	46	0	79	1	1	0	0	2	2	161	6	0	169	27	165	0	0	192	442
Total Volume	107	7	179	0	293	1	2	5	0	8	10	620	57	0	687	88	719	5	0	812	1800
% App. Total	36.5	2.4	61.1	0		12.5	25	62.5	0		1.5	90.2	8.3	0		10.8	88.5	0.6	0		
PHF	.863	.438	.814	.000	.862	.250	.500	.417	.000	.667	.500	.963	.750	.000	.949	.815	.860	.417	.000	.883	.943



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TMC Data
Ridgewalk Pkwy @ Ridge Trail
7-9am | 4-6pm

File Name : 37680005
Site Code : 37680005
Start Date : 11/17/2015
Page No : 1

Groups Printed- Cars, Buses, Trucks

	Ridge Trail Northbound					Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	49	0	22	0	71	0	0	0	0	0	0	85	21	0	106	4	97	0	0	101	278
07:15 AM	64	0	16	0	80	0	0	0	0	0	0	118	18	0	136	1	128	0	0	129	345
07:30 AM	43	0	21	0	64	0	0	0	0	0	0	115	22	0	137	6	115	0	0	121	322
07:45 AM	29	0	19	0	48	0	0	0	0	0	0	142	17	0	159	5	103	0	0	108	315
Total	185	0	78	0	263	0	0	0	0	0	0	460	78	0	538	16	443	0	0	459	1260
08:00 AM	31	0	14	0	45	0	0	0	0	0	0	112	19	0	131	7	105	0	0	112	288
08:15 AM	34	0	15	0	49	0	0	0	0	0	0	104	10	0	114	3	107	0	0	110	273
08:30 AM	30	0	20	0	50	0	0	0	0	0	0	96	11	0	107	4	100	0	0	104	261
08:45 AM	19	0	22	0	41	0	0	0	0	0	0	90	12	0	102	7	97	0	0	104	247
Total	114	0	71	0	185	0	0	0	0	0	0	402	52	0	454	21	409	0	0	430	1069
*** BREAK ***																					
04:00 PM	25	0	10	0	35	0	0	0	0	0	0	145	29	0	174	13	125	0	0	138	347
04:15 PM	17	0	13	0	30	0	0	0	0	0	0	134	32	0	166	14	126	0	0	140	336
04:30 PM	19	0	9	0	28	0	0	0	0	0	0	152	30	0	182	11	187	0	0	198	408
04:45 PM	21	0	10	0	31	0	0	0	0	0	0	165	35	0	200	7	148	0	0	155	386
Total	82	0	42	0	124	0	0	0	0	0	0	596	126	0	722	45	586	0	0	631	1477
05:00 PM	36	0	14	0	50	0	0	0	0	0	0	159	36	0	195	18	196	0	0	214	459
05:15 PM	33	0	11	0	44	0	0	0	0	0	0	143	36	0	179	21	178	0	0	199	422
05:30 PM	32	0	14	0	46	0	0	0	0	0	0	163	42	0	205	20	160	0	0	180	431
05:45 PM	18	0	10	0	28	0	0	0	0	0	0	175	28	0	203	15	143	0	0	158	389
Total	119	0	49	0	168	0	0	0	0	0	0	640	142	0	782	74	677	0	0	751	1701
Grand Total	500	0	240	0	740	0	0	0	0	0	0	2098	398	0	2496	156	2115	0	0	2271	5507
Apprch %	67.6	0	32.4	0		0	0	0	0		0	84.1	15.9	0		6.9	93.1	0	0		
Total %	9.1	0	4.4	0	13.4	0	0	0	0		0	38.1	7.2	0	45.3	2.8	38.4	0	0	41.2	

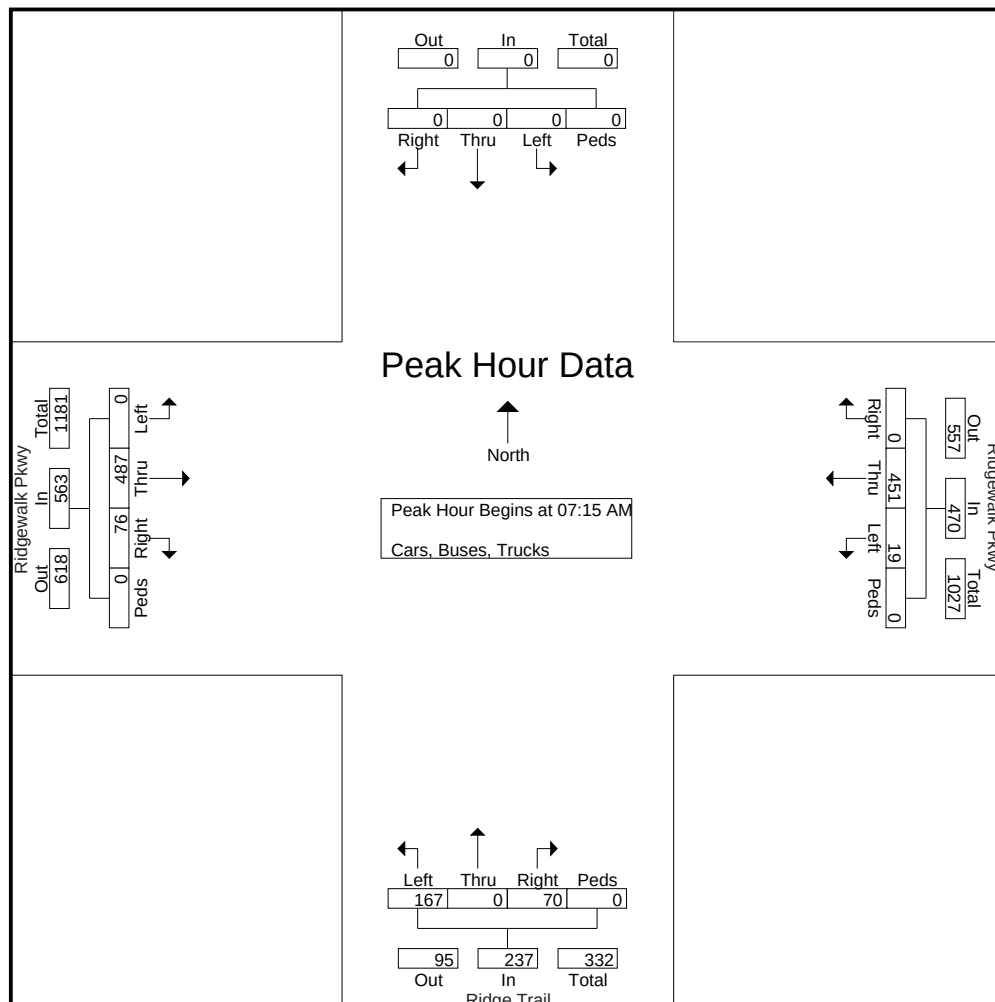
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TMC Data
Ridgewalk Pkwy @ Ridge Trail
7-9am | 4-6pm

File Name : 37680005
Site Code : 37680005
Start Date : 11/17/2015
Page No : 2

	Ridge Trail Northbound					Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	64	0	16	0	80	0	0	0	0	0	0	118	18	0	136	1	128	0	0	129	345
07:30 AM	43	0	21	0	64	0	0	0	0	0	0	115	22	0	137	6	115	0	0	121	322
07:45 AM	29	0	19	0	48	0	0	0	0	0	0	142	17	0	159	5	103	0	0	108	315
08:00 AM	31	0	14	0	45	0	0	0	0	0	0	112	19	0	131	7	105	0	0	112	288
Total Volume	167	0	70	0	237	0	0	0	0	0	0	487	76	0	563	19	451	0	0	470	1270
% App. Total	70.5	0	29.5	0		0	0	0	0		0	86.5	13.5	0		4	96	0	0		
PHF	.652	.000	.833	.000	.741	.000	.000	.000	.000	.000	.000	.857	.864	.000	.885	.679	.881	.000	.000	.911	.920



Reliable Traffic Data Services, LLC

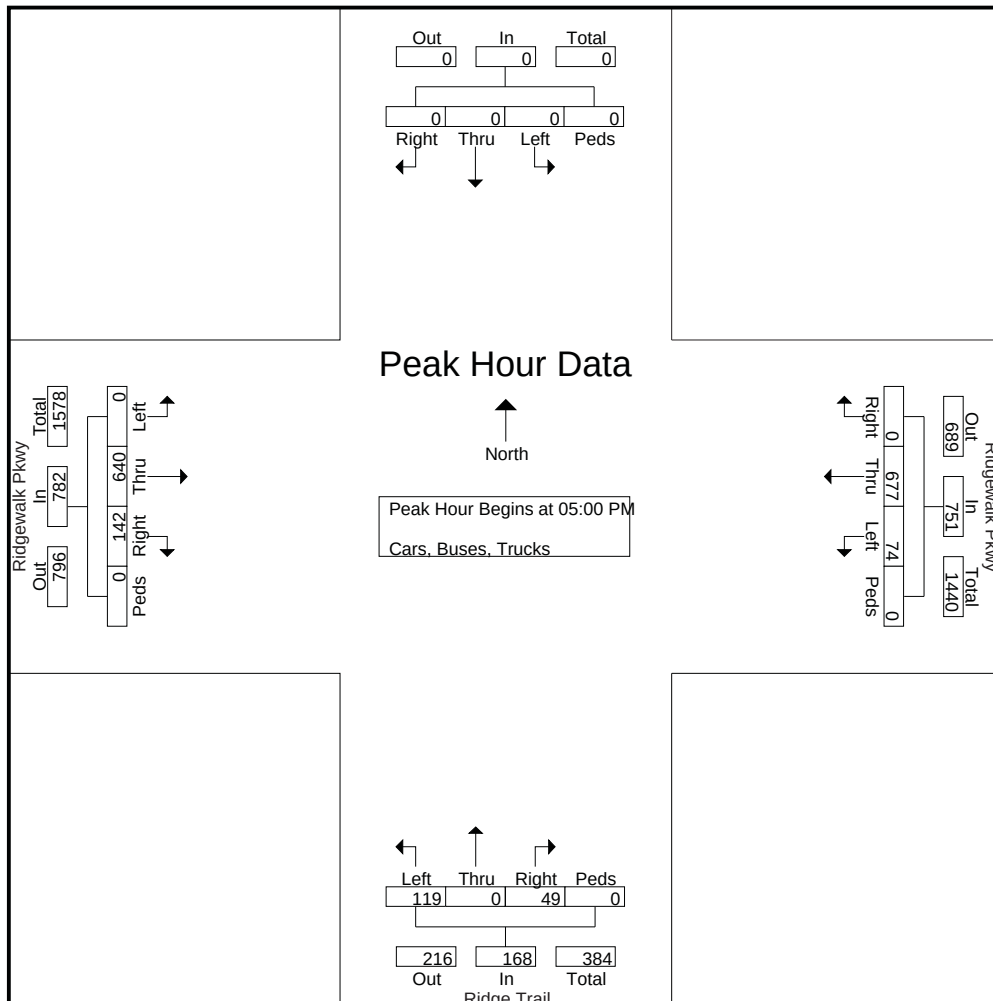
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TMC Data
Ridgewalk Pkwy @ Ridge Trail

7-9am | 4-6pm

File Name : 37680005
Site Code : 37680005
Start Date : 11/17/2015
Page No : 3

	Ridge Trail Northbound					Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	36	0	14	0	50	0	0	0	0	0	0	159	36	0	195	18	196	0	0	214	459
05:15 PM	33	0	11	0	44	0	0	0	0	0	0	143	36	0	179	21	178	0	0	199	422
05:30 PM	32	0	14	0	46	0	0	0	0	0	0	163	42	0	205	20	160	0	0	180	431
05:45 PM	18	0	10	0	28	0	0	0	0	0	0	175	28	0	203	15	143	0	0	158	389
Total Volume	119	0	49	0	168	0	0	0	0	0	0	640	142	0	782	74	677	0	0	751	1701
% App. Total	70.8	0	29.2	0		0	0	0	0		0	81.8	18.2	0		9.9	90.1	0	0		
PHF	.826	.000	.875	.000	.840	.000	.000	.000	.000	.000	.000	.914	.845	.000	.954	.881	.864	.000	.000	.877	.926



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TMC Data
Main St @ E Cherokee Dr/
Publix Drwy
7-9am I 4-6pm

File Name : 37680006
Site Code : 37680006
Start Date : 11/17/2015
Page No : 1

Groups Printed- Cars, Buses, Trucks

	Main St Northbound					Main St Southbound					Publix Drwy Eastbound					E Cherokee Dr Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	3	21	77	0	101	123	99	1	0	223	1	1	1	0	3	105	2	44	0	151	478
07:15 AM	3	16	80	0	99	144	102	1	0	247	0	4	3	0	7	121	3	60	0	184	537
07:30 AM	4	24	85	0	113	100	131	3	0	234	1	29	8	0	38	118	7	81	0	206	591
07:45 AM	1	38	60	0	99	108	160	1	0	269	2	35	2	0	39	128	1	70	0	199	606
Total	11	99	302	0	412	475	492	6	0	973	4	69	14	0	87	472	13	255	0	740	2212
08:00 AM	8	22	60	0	90	112	106	2	0	220	0	37	4	0	41	101	9	63	0	173	524
08:15 AM	7	27	73	0	107	100	80	2	0	182	2	5	5	0	12	107	6	70	0	183	484
08:30 AM	3	39	51	0	93	81	56	0	0	137	2	1	6	0	9	122	7	79	0	208	447
08:45 AM	3	27	60	0	90	86	57	1	0	144	1	5	2	0	8	105	3	53	0	161	403
Total	21	115	244	0	380	379	299	5	0	683	5	48	17	0	70	435	25	265	0	725	1858
*** BREAK ***																					
04:00 PM	12	81	103	0	196	104	62	6	0	172	7	13	12	0	32	80	18	106	0	204	604
04:15 PM	24	82	103	0	209	70	41	2	0	113	11	19	12	0	42	86	18	122	0	226	590
04:30 PM	14	79	127	0	220	74	53	2	0	129	10	19	12	0	41	81	17	102	0	200	590
04:45 PM	27	106	124	0	257	70	48	6	0	124	6	12	6	0	24	74	27	97	0	198	603
Total	77	348	457	0	882	318	204	16	0	538	34	63	42	0	139	321	80	427	0	828	2387
05:00 PM	22	91	133	0	246	74	51	2	0	127	16	20	21	0	57	96	14	116	0	226	656
05:15 PM	23	89	157	0	269	69	58	4	0	131	4	18	18	0	40	107	11	86	0	204	644
05:30 PM	26	95	129	0	250	83	57	4	0	144	11	23	23	0	57	75	19	84	0	178	629
05:45 PM	22	76	116	0	214	96	42	5	0	143	12	17	3	0	32	83	25	67	0	175	564
Total	93	351	535	0	979	322	208	15	0	545	43	78	65	0	186	361	69	353	0	783	2493
Grand Total	202	913	1538	0	2653	1494	1203	42	0	2739	86	258	138	0	482	1589	187	1300	0	3076	8950
Apprch %	7.6	34.4	58	0		54.5	43.9	1.5	0		17.8	53.5	28.6	0		51.7	6.1	42.3	0		
Total %	2.3	10.2	17.2	0	29.6	16.7	13.4	0.5	0	30.6	1	2.9	1.5	0	5.4	17.8	2.1	14.5	0	34.4	

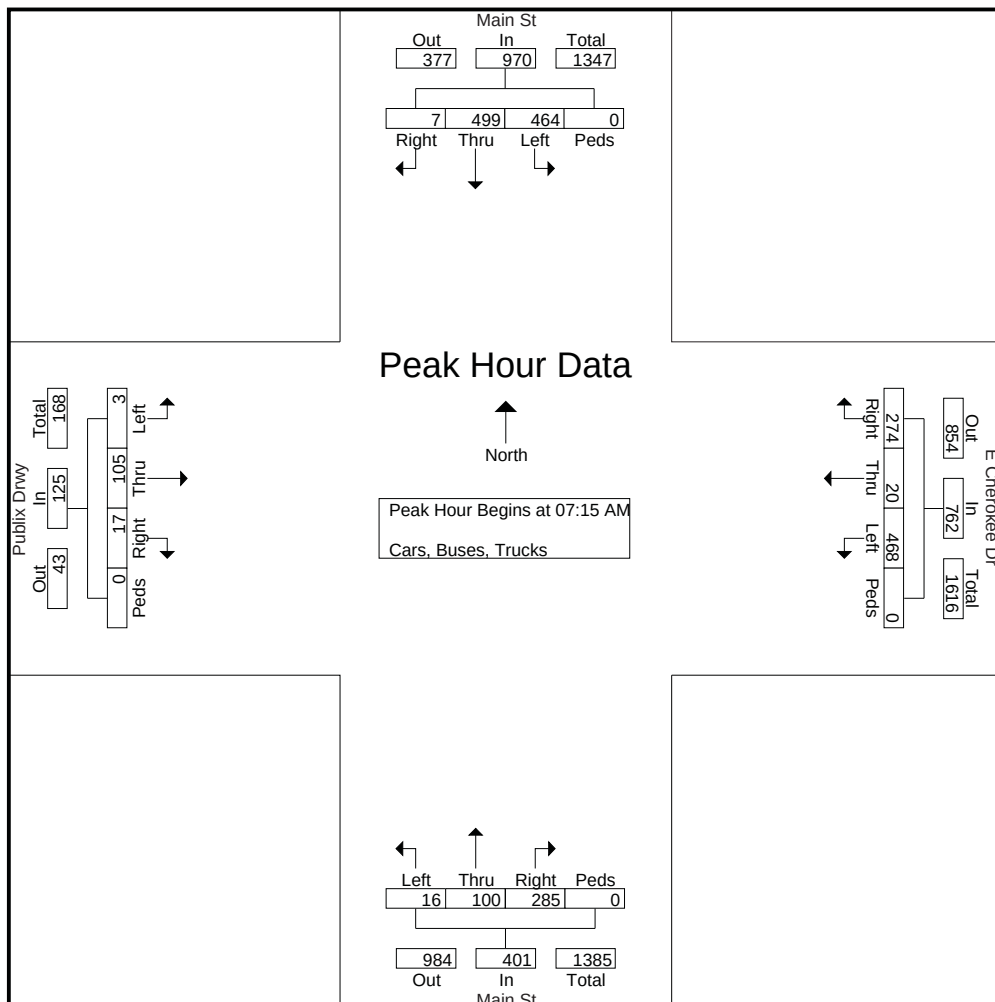
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TMC Data
Main St @ E Cherokee Dr/
Publix Drwy
7-9am I 4-6pm

File Name : 37680006
Site Code : 37680006
Start Date : 11/17/2015
Page No : 2

	Main St Northbound					Main St Southbound					Publix Drwy Eastbound					E Cherokee Dr Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	3	16	80	0	99	144	102	1	0	247	0	4	3	0	7	121	3	60	0	184	537
07:30 AM	4	24	85	0	113	100	131	3	0	234	1	29	8	0	38	118	7	81	0	206	591
07:45 AM	1	38	60	0	99	108	160	1	0	269	2	35	2	0	39	128	1	70	0	199	606
08:00 AM	8	22	60	0	90	112	106	2	0	220	0	37	4	0	41	101	9	63	0	173	524
Total Volume	16	100	285	0	401	464	499	7	0	970	3	105	17	0	125	468	20	274	0	762	2258
% App. Total	4	24.9	71.1	0		47.8	51.4	0.7	0		2.4	84	13.6	0		61.4	2.6	36	0		
PHF	.500	.658	.838	.000	.887	.806	.780	.583	.000	.901	.375	.709	.531	.000	.762	.914	.556	.846	.000	.925	.932



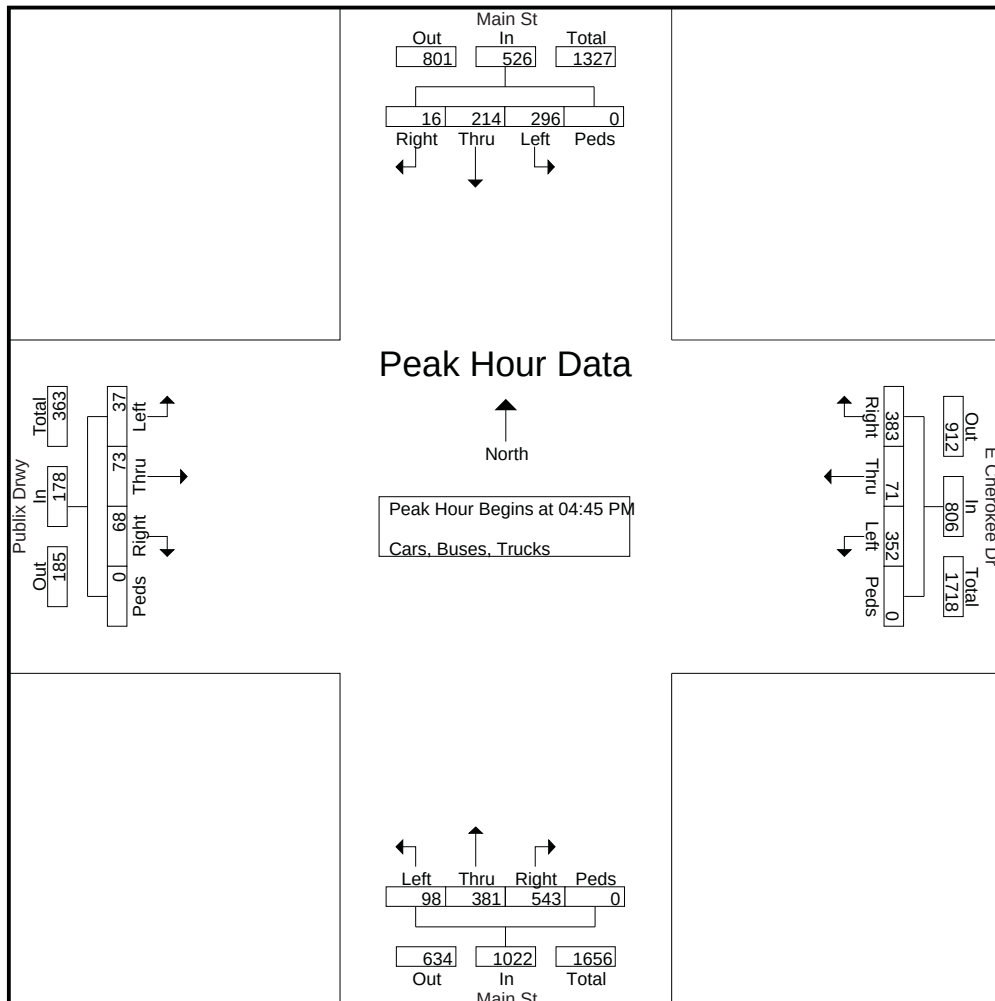
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TMC Data
Main St @ E Cherokee Dr/
Publix Drwy
7-9am I 4-6pm

File Name : 37680006
Site Code : 37680006
Start Date : 11/17/2015
Page No : 3

	Main St Northbound					Main St Southbound					Publix Drwy Eastbound					E Cherokee Dr Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	27	106	124	0	257	70	48	6	0	124	6	12	6	0	24	74	27	97	0	198	603
05:00 PM	22	91	133	0	246	74	51	2	0	127	16	20	21	0	57	96	14	116	0	226	656
05:15 PM	23	89	157	0	269	69	58	4	0	131	4	18	18	0	40	107	11	86	0	204	644
05:30 PM	26	95	129	0	250	83	57	4	0	144	11	23	23	0	57	75	19	84	0	178	629
Total Volume	98	381	543	0	1022	296	214	16	0	526	37	73	68	0	178	352	71	383	0	806	2532
% App. Total	9.6	37.3	53.1	0		56.3	40.7	3	0		20.8	41	38.2	0		43.7	8.8	47.5	0		
PHF	.907	.899	.865	.000	.950	.892	.922	.667	.000	.913	.578	.793	.739	.000	.781	.822	.657	.825	.000	.892	.965



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TMC Data
Main St @ Rope Mill Rd/
E Main St
7-9am | 4-6pm

File Name : 37680007
Site Code : 37680007
Start Date : 11/17/2015
Page No : 1

Groups Printed- Cars, Buses, Trucks

	Main St Northbound					Main St Southbound					Rope Mill Rd Eastbound					E Main St Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	32	18	0	0	50	0	99	2	0	101	1	0	50	0	51	0	0	0	0	0	202
07:15 AM	63	44	1	0	108	0	111	11	0	122	2	0	42	0	44	0	0	0	0	0	274
07:30 AM	24	36	0	0	60	1	115	10	0	126	8	0	49	0	57	0	0	0	0	0	243
07:45 AM	13	50	1	0	64	0	118	3	0	121	1	2	25	0	28	0	0	0	0	0	213
Total	132	148	2	0	282	1	443	26	0	470	12	2	166	0	180	0	0	0	0	0	932
08:00 AM	5	50	0	0	55	3	137	1	0	141	1	0	19	0	20	1	0	0	0	1	217
08:15 AM	4	45	3	0	52	0	134	1	0	135	1	0	25	0	26	0	0	0	0	0	213
08:30 AM	11	43	0	0	54	0	109	1	0	110	0	0	22	0	22	2	1	0	0	3	189
08:45 AM	19	48	1	0	68	0	96	4	0	100	2	0	26	0	28	0	0	0	0	0	196
Total	39	186	4	0	229	3	476	7	0	486	4	0	92	0	96	3	1	0	0	4	815
*** BREAK ***																					
04:00 PM	22	84	3	0	109	1	97	8	0	106	1	0	28	0	29	0	0	0	0	0	244
04:15 PM	14	99	2	0	115	0	83	3	0	86	4	0	15	0	19	1	0	0	0	1	221
04:30 PM	22	101	1	0	124	0	93	6	0	99	1	0	27	0	28	1	1	0	0	2	253
04:45 PM	27	98	2	0	127	0	65	2	0	67	0	0	21	0	21	2	1	1	0	4	219
Total	85	382	8	0	475	1	338	19	0	358	6	0	91	0	97	4	2	1	0	7	937
05:00 PM	22	96	2	0	120	0	91	7	0	98	6	0	22	0	28	1	1	0	0	2	248
05:15 PM	21	98	2	0	121	0	106	9	0	115	4	0	24	0	28	3	0	0	0	3	267
05:30 PM	24	104	1	0	129	0	82	6	0	88	2	0	26	0	28	3	2	0	0	5	250
05:45 PM	24	101	2	0	127	0	83	5	0	88	3	0	29	0	32	2	1	0	0	3	250
Total	91	399	7	0	497	0	362	27	0	389	15	0	101	0	116	9	4	0	0	13	1015
Grand Total	347	1115	21	0	1483	5	1619	79	0	1703	37	2	450	0	489	16	7	1	0	24	3699
Apprch %	23.4	75.2	1.4	0		0.3	95.1	4.6	0		7.6	0.4	92	0		66.7	29.2	4.2	0		
Total %	9.4	30.1	0.6	0	40.1	0.1	43.8	2.1	0	46	1	0.1	12.2	0	13.2	0.4	0.2	0	0	0.6	

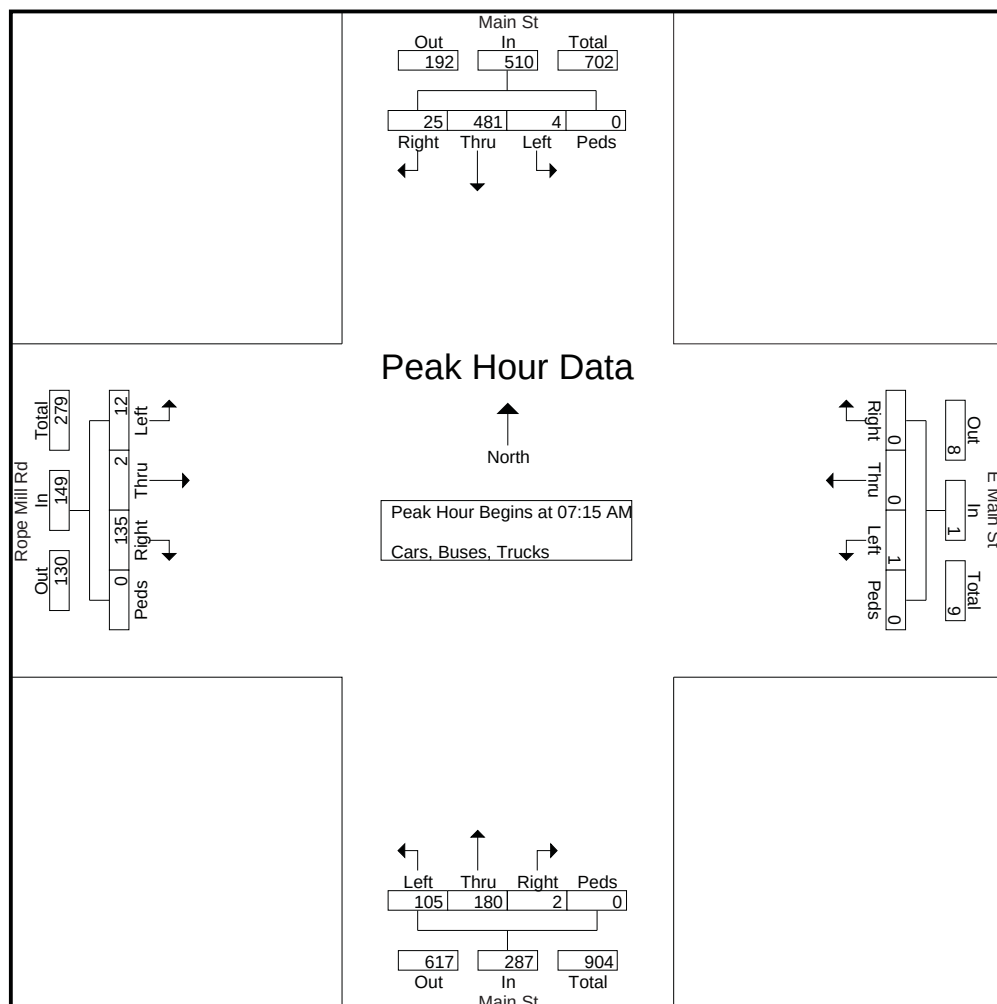
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TMC Data
Main St @ Rope Mill Rd/
E Main St
7-9am I 4-6pm

File Name : 37680007
Site Code : 37680007
Start Date : 11/17/2015
Page No : 2

	Main St Northbound					Main St Southbound					Rope Mill Rd Eastbound					E Main St Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	63	44	1	0	108	0	111	11	0	122	2	0	42	0	44	0	0	0	0	0	274
07:30 AM	24	36	0	0	60	1	115	10	0	126	8	0	49	0	57	0	0	0	0	0	243
07:45 AM	13	50	1	0	64	0	118	3	0	121	1	2	25	0	28	0	0	0	0	0	213
08:00 AM	5	50	0	0	55	3	137	1	0	141	1	0	19	0	20	1	0	0	0	1	217
Total Volume	105	180	2	0	287	4	481	25	0	510	12	2	135	0	149	1	0	0	0	1	947
% App. Total	36.6	62.7	0.7	0		0.8	94.3	4.9	0		8.1	1.3	90.6	0		100	0	0	0		
PHF	.417	.900	.500	.000	.664	.333	.878	.568	.000	.904	.375	.250	.689	.000	.654	.250	.000	.000	.000	.250	.864



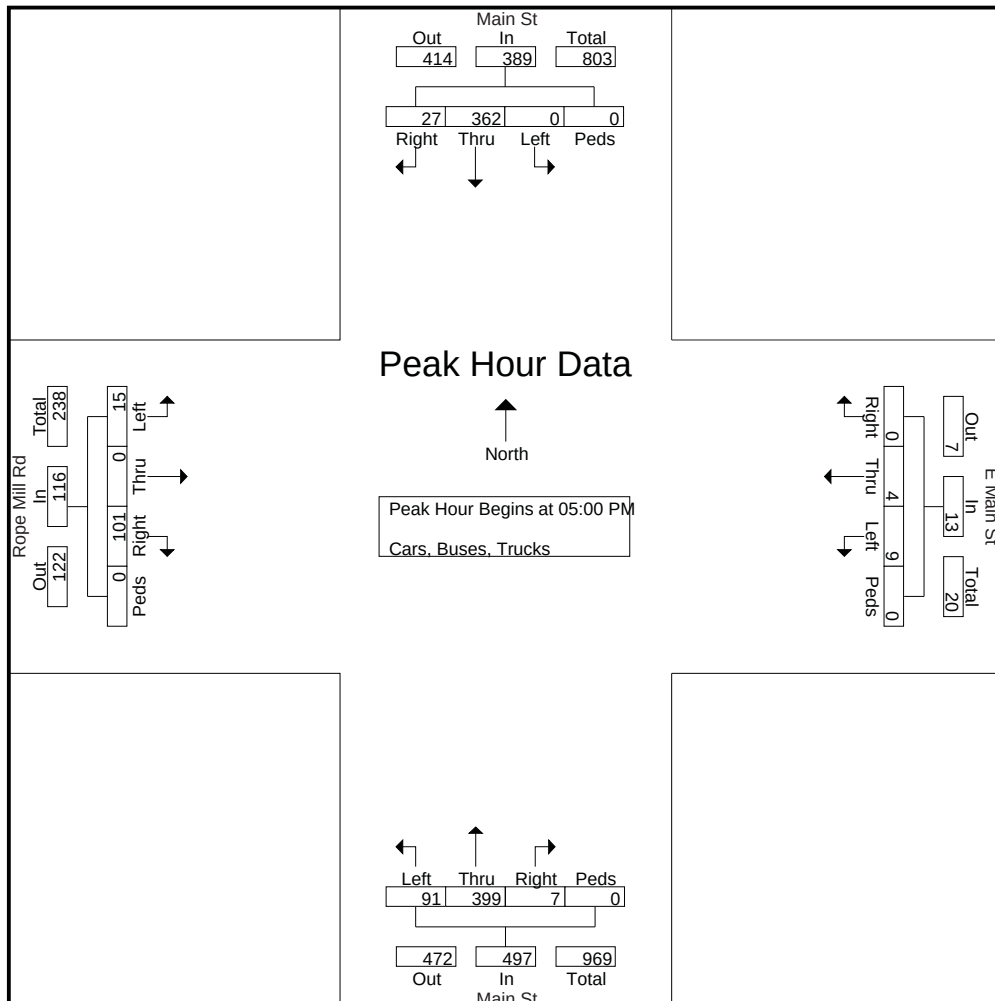
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TMC Data
Main St @ Rope Mill Rd/
E Main St
7-9am I 4-6pm

File Name : 37680007
Site Code : 37680007
Start Date : 11/17/2015
Page No : 3

	Main St Northbound					Main St Southbound					Rope Mill Rd Eastbound					E Main St Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	22	96	2	0	120	0	91	7	0	98	6	0	22	0	28	1	1	0	0	2	248
05:15 PM	21	98	2	0	121	0	106	9	0	115	4	0	24	0	28	3	0	0	0	3	267
05:30 PM	24	104	1	0	129	0	82	6	0	88	2	0	26	0	28	3	2	0	0	5	250
05:45 PM	24	101	2	0	127	0	83	5	0	88	3	0	29	0	32	2	1	0	0	3	250
Total Volume	91	399	7	0	497	0	362	27	0	389	15	0	101	0	116	9	4	0	0	13	1015
% App. Total	18.3	80.3	1.4	0		0	93.1	6.9	0		12.9	0	87.1	0		69.2	30.8	0	0		
PHF	.948	.959	.875	.000	.963	.000	.854	.750	.000	.846	.625	.000	.871	.000	.906	.750	.500	.000	.000	.650	.950



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TMC Data
Woodstock Pkwy @ Rope Mill Rd/
The Outlet Shoppes Drwy
7-9am | 4-6pm

File Name : 37680008
Site Code : 37680008
Start Date : 11/24/2015
Page No : 1

Groups Printed- Cars, Buses, Trucks

	Woodstock Pkwy Northbound					Woodstock Pkwy Southbound					The Outlet Shoppes Drwy Eastbound					Rope Mill Rd Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	2	6	9	0	17	5	12	1	0	18	0	4	3	0	7	4	1	1	0	6	48
07:15 AM	1	7	1	0	9	2	15	2	0	19	1	4	6	0	11	6	1	2	0	9	48
07:30 AM	1	4	2	0	7	6	22	2	0	30	2	2	4	0	8	3	2	3	0	8	53
07:45 AM	8	7	2	0	17	5	22	2	0	29	2	3	4	0	9	5	5	6	0	16	71
Total	12	24	14	0	50	18	71	7	0	96	5	13	17	0	35	18	9	12	0	39	220
08:00 AM	4	9	3	0	16	3	23	3	0	29	3	4	3	0	10	7	3	4	0	14	69
08:15 AM	4	7	5	0	16	5	11	3	0	19	3	2	3	0	8	1	2	5	0	8	51
08:30 AM	4	10	5	0	19	6	11	1	0	18	0	3	3	0	6	8	2	3	0	13	56
08:45 AM	7	7	4	0	18	7	14	3	0	24	0	2	4	0	6	4	4	4	0	12	60
Total	19	33	17	0	69	21	59	10	0	90	6	11	13	0	30	20	11	16	0	47	236
*** BREAK ***																					
04:00 PM	9	24	7	0	40	7	9	3	0	19	6	5	19	0	30	3	6	10	0	19	108
04:15 PM	16	31	4	0	51	3	4	0	0	7	5	6	9	0	20	7	3	9	0	19	97
04:30 PM	9	23	2	0	34	12	11	0	0	23	2	7	9	0	18	5	10	10	0	25	100
04:45 PM	15	29	4	0	48	5	9	1	0	15	5	6	14	0	25	6	6	11	0	23	111
Total	49	107	17	0	173	27	33	4	0	64	18	24	51	0	93	21	25	40	0	86	416
05:00 PM	7	54	4	0	65	3	14	1	0	18	2	8	19	0	29	2	8	14	0	24	136
05:15 PM	8	40	5	0	53	11	9	1	0	21	4	8	15	0	27	9	9	11	0	29	130
05:30 PM	13	39	6	0	58	7	12	2	0	21	3	6	15	0	24	2	8	10	0	20	123
05:45 PM	9	24	2	0	35	11	4	5	0	20	7	7	21	0	35	5	7	14	0	26	116
Total	37	157	17	0	211	32	39	9	0	80	16	29	70	0	115	18	32	49	0	99	505
Grand Total	117	321	65	0	503	98	202	30	0	330	45	77	151	0	273	77	77	117	0	271	1377
Apprch %	23.3	63.8	12.9	0		29.7	61.2	9.1	0		16.5	28.2	55.3	0		28.4	28.4	43.2	0		
Total %	8.5	23.3	4.7	0	36.5	7.1	14.7	2.2	0	24	3.3	5.6	11	0	19.8	5.6	5.6	8.5	0	19.7	

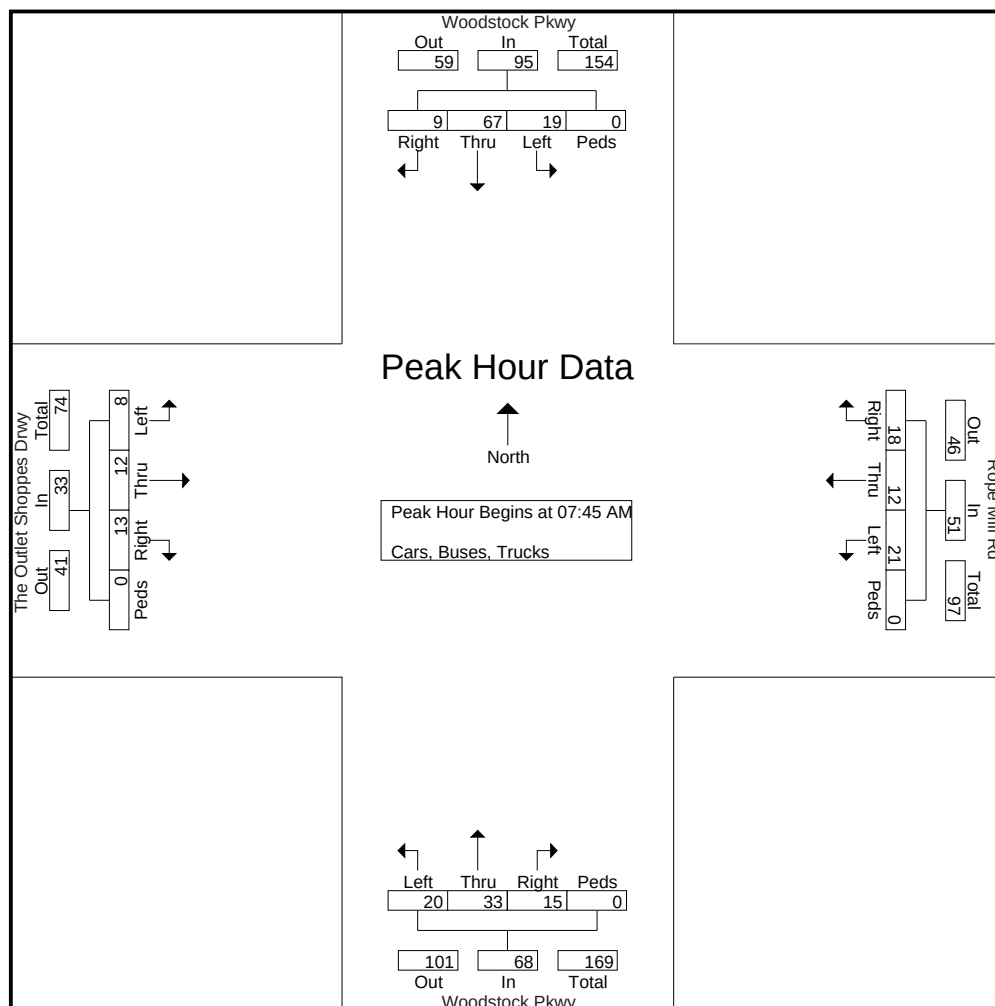
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TMC Data
Woodstock Pkwy @ Rope Mill Rd/
The Outlet Shoppes Drwy
7-9am | 4-6pm

File Name : 37680008
Site Code : 37680008
Start Date : 11/24/2015
Page No : 2

	Woodstock Pkwy Northbound					Woodstock Pkwy Southbound					The Outlet Shoppes Drwy Eastbound					Rope Mill Rd Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	8	7	2	0	17	5	22	2	0	29	2	3	4	0	9	5	5	6	0	16	71
08:00 AM	4	9	3	0	16	3	23	3	0	29	3	4	3	0	10	7	3	4	0	14	69
08:15 AM	4	7	5	0	16	5	11	3	0	19	3	2	3	0	8	1	2	5	0	8	51
08:30 AM	4	10	5	0	19	6	11	1	0	18	0	3	3	0	6	8	2	3	0	13	56
Total Volume	20	33	15	0	68	19	67	9	0	95	8	12	13	0	33	21	12	18	0	51	247
% App. Total	29.4	48.5	22.1	0		20	70.5	9.5	0		24.2	36.4	39.4	0		41.2	23.5	35.3	0		
PHF	.625	.825	.750	.000	.895	.792	.728	.750	.000	.819	.667	.750	.813	.000	.825	.656	.600	.750	.000	.797	.870



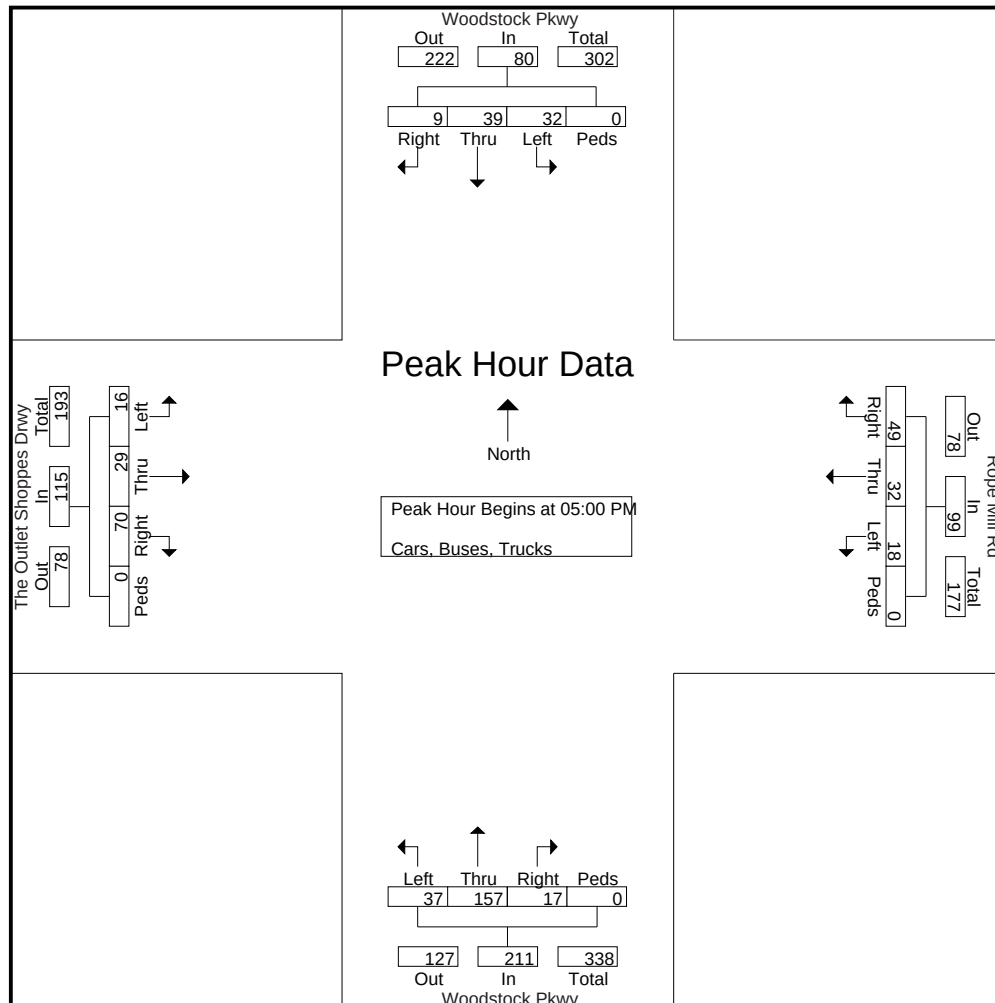
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TMC Data
Woodstock Pkwy @ Rope Mill Rd/
The Outlet Shoppes Drwy
7-9am | 4-6pm

File Name : 37680008
Site Code : 37680008
Start Date : 11/24/2015
Page No : 3

	Woodstock Pkwy Northbound					Woodstock Pkwy Southbound					The Outlet Shoppes Drwy Eastbound					Rope Mill Rd Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	7	54	4	0	65	3	14	1	0	18	2	8	19	0	29	2	8	14	0	24	136
05:15 PM	8	40	5	0	53	11	9	1	0	21	4	8	15	0	27	9	9	11	0	29	130
05:30 PM	13	39	6	0	58	7	12	2	0	21	3	6	15	0	24	2	8	10	0	20	123
05:45 PM	9	24	2	0	35	11	4	5	0	20	7	7	21	0	35	5	7	14	0	26	116
Total Volume	37	157	17	0	211	32	39	9	0	80	16	29	70	0	115	18	32	49	0	99	505
% App. Total	17.5	74.4	8.1	0		40	48.8	11.2	0		13.9	25.2	60.9	0		18.2	32.3	49.5	0		
PHF	.712	.727	.708	.000	.812	.727	.696	.450	.000	.952	.571	.906	.833	.000	.821	.500	.889	.875	.000	.853	.928



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TMC Data
Ridgewalk Pkwy @ Main St
7-9am I 4-6pm

File Name : 37660001
Site Code : 37660001
Start Date : 11/11/2015
Page No : 1

Groups Printed- Cars, Buses, Trucks

	Main St Northbound					Main St Southbound					Ridgewalk Pkwy Eastbound					Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	7	27	0	0	34	0	82	94	0	176	69	0	38	0	107	0	0	0	0	0	317
07:15 AM	13	24	0	0	37	0	74	116	0	190	96	0	34	0	130	0	0	0	0	0	357
07:30 AM	13	48	0	0	61	0	78	103	0	181	93	0	41	0	134	0	0	0	0	0	376
07:45 AM	10	42	0	0	52	0	85	87	0	172	114	0	47	0	161	0	0	0	0	0	385
Total	43	141	0	0	184	0	319	400	0	719	372	0	160	0	532	0	0	0	0	0	1435
08:00 AM	12	38	0	0	50	0	82	89	0	171	86	0	39	0	125	0	0	0	0	0	346
08:15 AM	14	35	0	0	49	0	79	96	0	175	83	0	36	0	119	0	0	0	0	0	343
08:30 AM	12	40	0	0	52	0	73	92	0	165	72	0	32	0	104	0	0	0	0	0	321
08:45 AM	10	27	0	0	37	0	75	94	0	169	90	0	26	0	116	0	0	0	0	0	322
Total	48	140	0	0	188	0	309	371	0	680	331	0	133	0	464	0	0	0	0	0	1332
*** BREAK ***																					
04:00 PM	35	95	0	0	130	0	58	106	0	164	137	0	20	0	157	0	0	0	0	0	451
04:15 PM	41	88	0	0	129	0	52	99	0	151	124	0	23	0	147	0	0	0	0	0	427
04:30 PM	36	101	0	0	137	0	64	162	0	226	137	0	29	0	166	0	0	0	0	0	529
04:45 PM	33	85	0	0	118	0	62	122	0	184	155	0	20	0	175	0	0	0	0	0	477
Total	145	369	0	0	514	0	236	489	0	725	553	0	92	0	645	0	0	0	0	0	1884
05:00 PM	43	83	0	0	126	0	73	181	0	254	143	0	30	0	173	0	0	0	0	0	553
05:15 PM	45	86	0	0	131	0	70	149	0	219	107	0	41	0	148	0	0	0	0	0	498
05:30 PM	43	104	0	0	147	0	65	137	0	202	140	0	37	0	177	0	0	0	0	0	526
05:45 PM	40	96	0	0	136	0	61	118	0	179	146	0	39	0	185	0	0	0	0	0	500
Total	171	369	0	0	540	0	269	585	0	854	536	0	147	0	683	0	0	0	0	0	2077
Grand Total	407	1019	0	0	1426	0	1133	1845	0	2978	1792	0	532	0	2324	0	0	0	0	0	6728
Apprch %	28.5	71.5	0	0		0	38	62	0		77.1	0	22.9	0		0	0	0	0		
Total %	6	15.1	0	0	21.2	0	16.8	27.4	0	44.3	26.6	0	7.9	0	34.5	0	0	0	0	0	

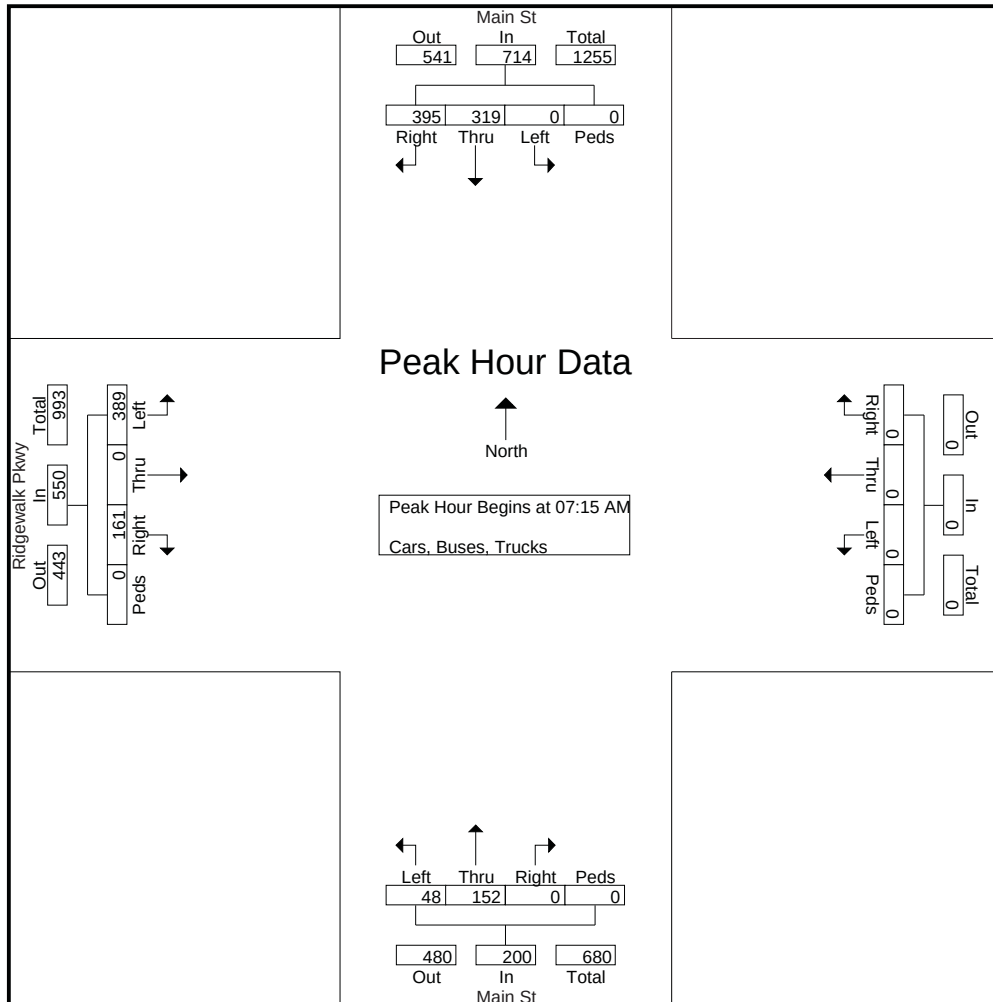
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TMC Data
Ridgewalk Pkwy @ Main St
7-9am I 4-6pm

File Name : 37660001
Site Code : 37660001
Start Date : 11/11/2015
Page No : 2

	Main St Northbound					Main St Southbound					Ridgewalk Pkwy Eastbound					Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	13	24	0	0	37	0	74	116	0	190	96	0	34	0	130	0	0	0	0	0	357
07:30 AM	13	48	0	0	61	0	78	103	0	181	93	0	41	0	134	0	0	0	0	0	376
07:45 AM	10	42	0	0	52	0	85	87	0	172	114	0	47	0	161	0	0	0	0	0	385
08:00 AM	12	38	0	0	50	0	82	89	0	171	86	0	39	0	125	0	0	0	0	0	346
Total Volume	48	152	0	0	200	0	319	395	0	714	389	0	161	0	550	0	0	0	0	0	1464
% App. Total	24	76	0	0		0	44.7	55.3	0		70.7	0	29.3	0		0	0	0	0		
PHF	.923	.792	.000	.000	.820	.000	.938	.851	.000	.939	.853	.000	.856	.000	.854	.000	.000	.000	.000	.000	.951



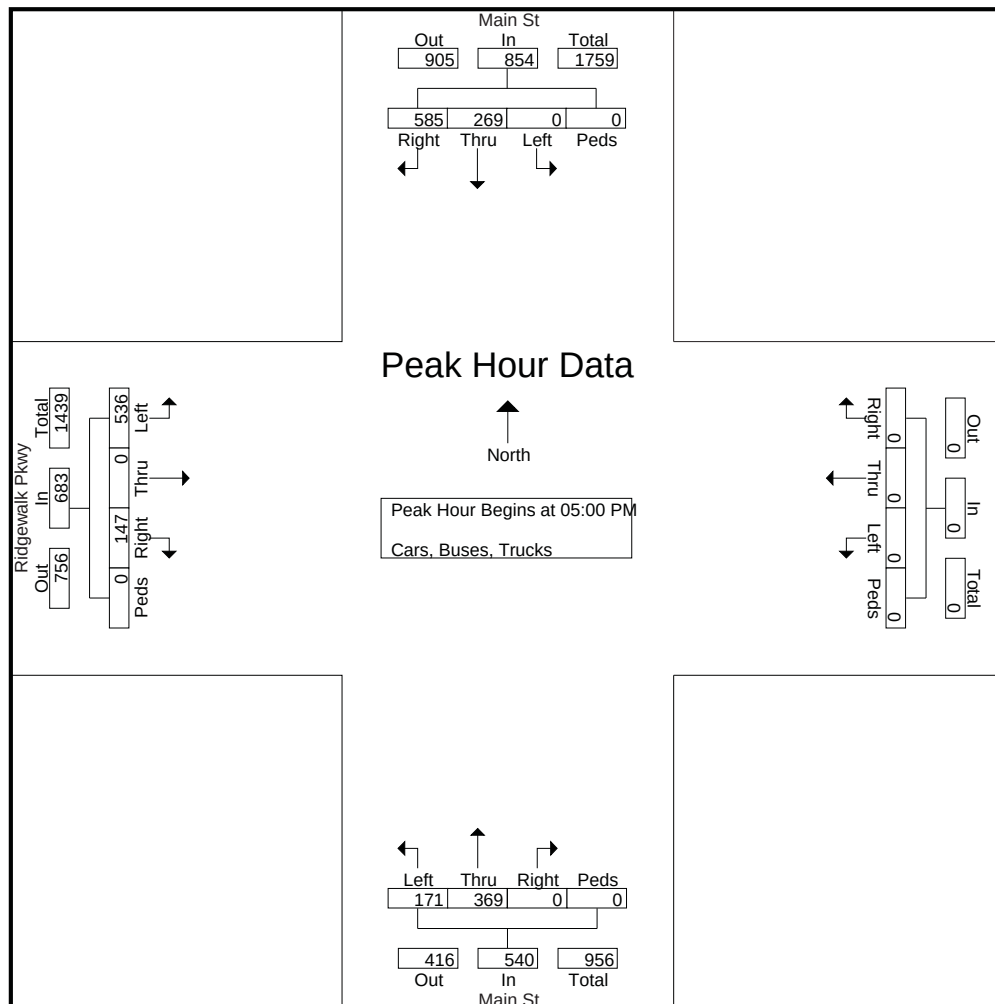
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TMC Data
Ridgewalk Pkwy @ Main St
7-9am I 4-6pm

File Name : 37660001
Site Code : 37660001
Start Date : 11/11/2015
Page No : 3

	Main St Northbound					Main St Southbound					Ridgewalk Pkwy Eastbound					Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	43	83	0	0	126	0	73	181	0	254	143	0	30	0	173	0	0	0	0	0	553
05:15 PM	45	86	0	0	131	0	70	149	0	219	107	0	41	0	148	0	0	0	0	0	498
05:30 PM	43	104	0	0	147	0	65	137	0	202	140	0	37	0	177	0	0	0	0	0	526
05:45 PM	40	96	0	0	136	0	61	118	0	179	146	0	39	0	185	0	0	0	0	0	500
Total Volume	171	369	0	0	540	0	269	585	0	854	536	0	147	0	683	0	0	0	0	0	2077
% App. Total	31.7	68.3	0	0		0	31.5	68.5	0		78.5	0	21.5	0		0	0	0	0		
PHF	.950	.887	.000	.000	.918	.000	.921	.808	.000	.841	.918	.000	.896	.000	.923	.000	.000	.000	.000	.000	.939



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TMC Data
Ridgewalk Pkwy @ Woodstock Pkwy/
Meridian Dr
7-9am I 4-6pm

File Name : 37680010
Site Code : 37680010
Start Date : 11/24/2015
Page No : 1

Groups Printed- Cars, Buses, Trucks

	Woodstock Pkwy Northbound					Meridian Dr Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	1	0	6	0	7	1	1	3	0	5	1	60	8	0	69	10	72	0	0	82	163
07:15 AM	2	0	8	0	10	0	1	1	0	2	0	91	8	0	99	13	88	0	0	101	212
07:30 AM	3	0	5	0	8	0	1	3	0	4	1	97	15	0	113	22	86	0	0	108	233
07:45 AM	5	0	9	0	14	0	2	2	0	4	2	115	20	0	137	17	95	0	0	112	267
Total	11	0	28	0	39	1	5	9	0	15	4	363	51	0	418	62	341	0	0	403	875
08:00 AM	7	0	9	0	16	1	1	0	0	2	1	93	13	0	107	19	110	1	0	130	255
08:15 AM	7	0	8	0	15	0	0	1	0	1	1	96	9	0	106	10	100	1	0	111	233
08:30 AM	3	0	10	0	13	2	1	2	0	5	0	96	8	0	104	8	93	0	0	101	223
08:45 AM	3	1	6	0	10	2	1	2	0	5	1	78	9	0	88	20	107	1	0	128	231
Total	20	1	33	0	54	5	3	5	0	13	3	363	39	0	405	57	410	3	0	470	942
*** BREAK ***																					
04:00 PM	17	0	27	0	44	2	2	2	0	6	2	138	10	0	150	15	138	1	0	154	354
04:15 PM	24	1	27	0	52	1	0	2	0	3	4	126	11	0	141	14	145	2	0	161	357
04:30 PM	20	1	39	0	60	2	0	4	0	6	4	135	20	0	159	21	170	1	0	192	417
04:45 PM	26	2	25	0	53	1	1	2	0	4	3	139	7	0	149	25	152	3	0	180	386
Total	87	4	118	0	209	6	3	10	0	19	13	538	48	0	599	75	605	7	0	687	1514
05:00 PM	31	0	45	0	76	0	0	2	0	2	3	142	10	0	155	23	167	1	0	191	424
05:15 PM	31	2	42	0	75	0	1	0	0	1	0	123	13	0	136	19	154	0	0	173	385
05:30 PM	27	4	54	0	85	2	1	1	0	4	2	116	16	0	134	26	138	1	0	165	388
05:45 PM	25	0	37	0	62	1	0	2	0	3	2	121	13	0	136	20	124	1	0	145	346
Total	114	6	178	0	298	3	2	5	0	10	7	502	52	0	561	88	583	3	0	674	1543
Grand Total	232	11	357	0	600	15	13	29	0	57	27	1766	190	0	1983	282	1939	13	0	2234	4874
Apprch %	38.7	1.8	59.5	0		26.3	22.8	50.9	0		1.4	89.1	9.6	0		12.6	86.8	0.6	0		
Total %	4.8	0.2	7.3	0	12.3	0.3	0.3	0.6	0	1.2	0.6	36.2	3.9	0	40.7	5.8	39.8	0.3	0	45.8	

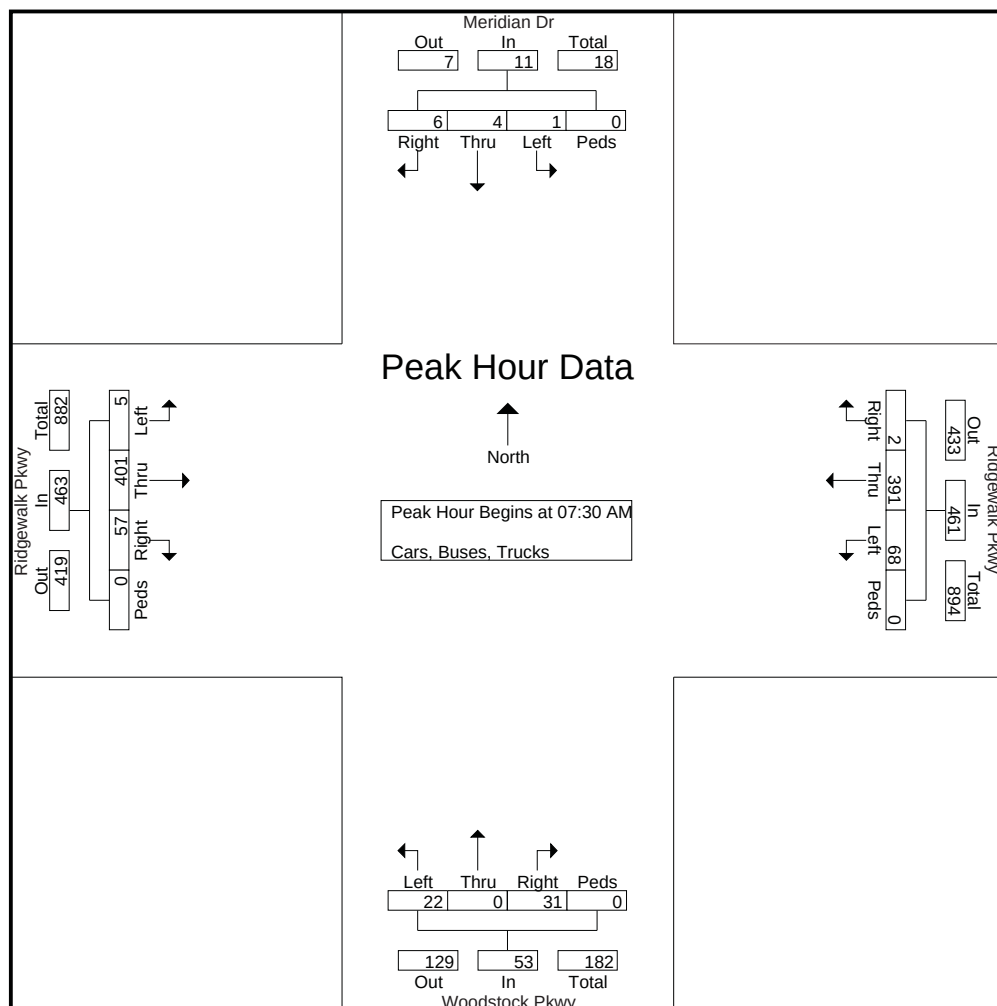
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TMC Data
Ridgewalk Pkwy @ Woodstock Pkwy/
Meridian Dr
7-9am I 4-6pm

File Name : 37680010
Site Code : 37680010
Start Date : 11/24/2015
Page No : 2

	Woodstock Pkwy Northbound					Meridian Dr Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	3	0	5	0	8	0	1	3	0	4	1	97	15	0	113	22	86	0	0	108	233
07:45 AM	5	0	9	0	14	0	2	2	0	4	2	115	20	0	137	17	95	0	0	112	267
08:00 AM	7	0	9	0	16	1	1	0	0	2	1	93	13	0	107	19	110	1	0	130	255
08:15 AM	7	0	8	0	15	0	0	1	0	1	1	96	9	0	106	10	100	1	0	111	233
Total Volume	22	0	31	0	53	1	4	6	0	11	5	401	57	0	463	68	391	2	0	461	988
% App. Total	41.5	0	58.5	0		9.1	36.4	54.5	0		1.1	86.6	12.3	0		14.8	84.8	0.4	0		
PHF	.786	.000	.861	.000	.828	.250	.500	.500	.000	.688	.625	.872	.713	.000	.845	.773	.889	.500	.000	.887	.925



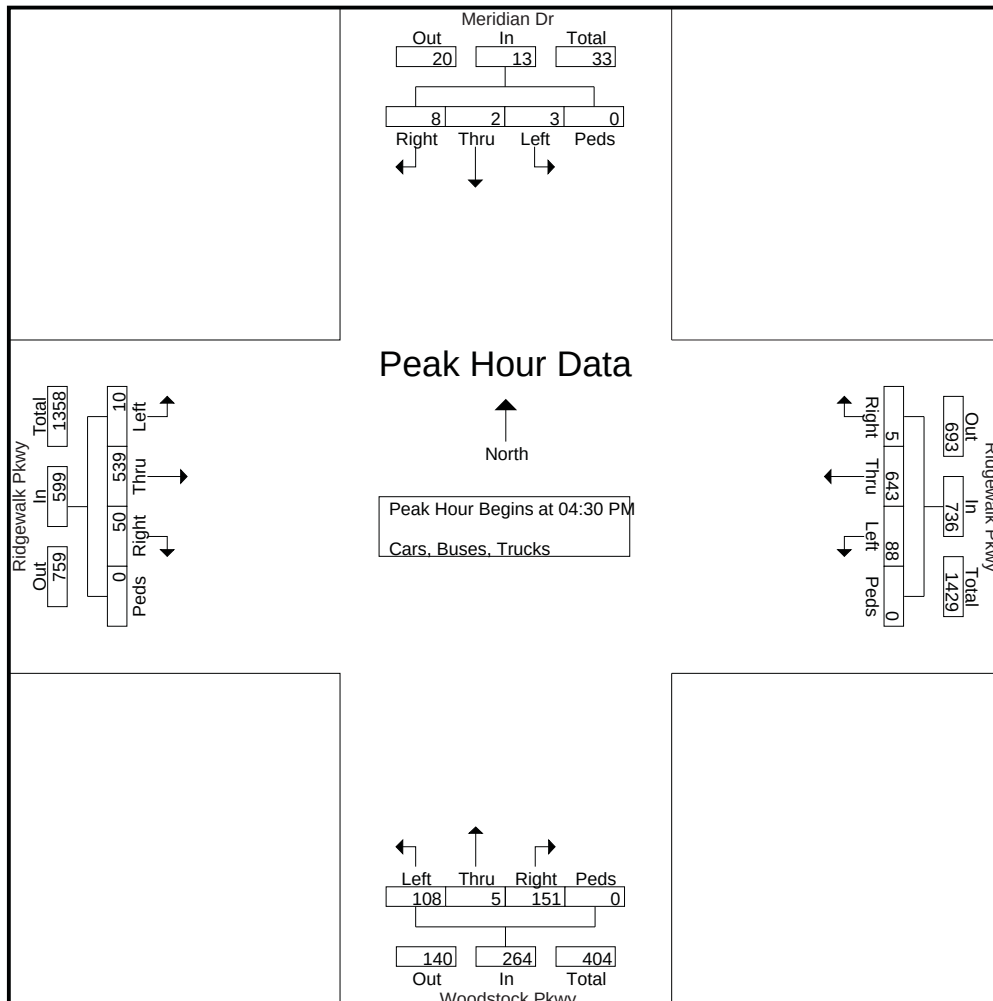
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TMC Data
Ridgewalk Pkwy @ Woodstock Pkwy/
Meridian Dr
7-9am I 4-6pm

File Name : 37680010
Site Code : 37680010
Start Date : 11/24/2015
Page No : 3

	Woodstock Pkwy Northbound					Meridian Dr Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	20	1	39	0	60	2	0	4	0	6	4	135	20	0	159	21	170	1	0	192	417
04:45 PM	26	2	25	0	53	1	1	2	0	4	3	139	7	0	149	25	152	3	0	180	386
05:00 PM	31	0	45	0	76	0	0	2	0	2	3	142	10	0	155	23	167	1	0	191	424
05:15 PM	31	2	42	0	75	0	1	0	0	1	0	123	13	0	136	19	154	0	0	173	385
Total Volume	108	5	151	0	264	3	2	8	0	13	10	539	50	0	599	88	643	5	0	736	1612
% App. Total	40.9	1.9	57.2	0		23.1	15.4	61.5	0		1.7	90	8.3	0		12	87.4	0.7	0		
PHF	.871	.625	.839	.000	.868	.375	.500	.500	.000	.542	.625	.949	.625	.000	.942	.880	.946	.417	.000	.958	.950



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TMC Data
Ridgewalk Pkwy @ I-575 SB Off-Ramp
12-2pm Sat

File Name : 37680001
Site Code : 37680001
Start Date : 11/21/2015
Page No : 1

Groups Printed- Cars, Buses, Trucks

	Northbound					I-575 SB Off-Ramp Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 PM	0	0	0	0	0	65	0	7	0	72	0	21	21	0	42	171	33	0	0	204	318
12:15 PM	0	0	0	0	0	52	0	11	0	63	0	20	23	0	43	167	27	0	0	194	300
12:30 PM	0	0	0	0	0	73	0	5	0	78	0	23	39	0	62	164	33	0	0	197	337
12:45 PM	0	0	0	0	0	92	0	10	0	102	0	19	29	0	48	155	29	0	0	184	334
Total	0	0	0	0	0	282	0	33	0	315	0	83	112	0	195	657	122	0	0	779	1289
01:00 PM	0	0	0	0	0	77	1	3	0	81	0	26	17	0	43	167	38	0	0	205	329
01:15 PM	0	0	0	0	0	60	2	2	0	64	0	19	15	0	34	169	37	0	0	206	304
01:30 PM	0	0	0	0	0	67	3	9	0	79	0	25	20	0	45	175	35	0	0	210	334
01:45 PM	0	0	0	0	0	70	0	3	0	73	0	19	17	0	36	155	32	0	0	187	296
Total	0	0	0	0	0	274	6	17	0	297	0	89	69	0	158	666	142	0	0	808	1263
Grand Total	0	0	0	0	0	556	6	50	0	612	0	172	181	0	353	1323	264	0	0	1587	2552
Apprch %	0	0	0	0		90.8	1	8.2	0		0	48.7	51.3	0		83.4	16.6	0	0		
Total %	0	0	0	0	0	21.8	0.2	2	0	24	0	6.7	7.1	0	13.8	51.8	10.3	0	0	62.2	

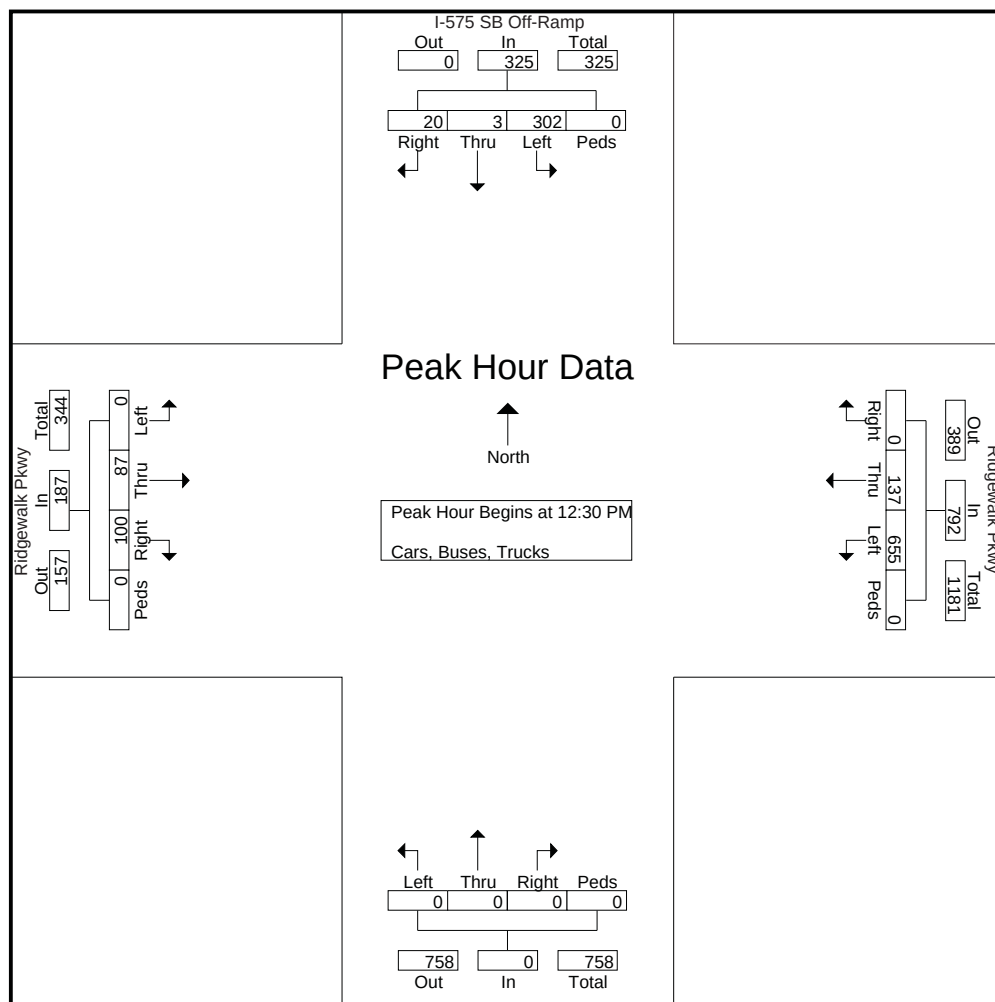
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TMC Data
Ridgewalk Pkwy @ I-575 SB Off-Ramp
12-2pm Sat

File Name : 37680001
Site Code : 37680001
Start Date : 11/21/2015
Page No : 2

	Northbound					I-575 SB Off-Ramp Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:30 PM																					
12:30 PM	0	0	0	0	0	73	0	5	0	78	0	23	39	0	62	164	33	0	0	197	337
12:45 PM	0	0	0	0	0	92	0	10	0	102	0	19	29	0	48	155	29	0	0	184	334
01:00 PM	0	0	0	0	0	77	1	3	0	81	0	26	17	0	43	167	38	0	0	205	329
01:15 PM	0	0	0	0	0	60	2	2	0	64	0	19	15	0	34	169	37	0	0	206	304
Total Volume	0	0	0	0	0	302	3	20	0	325	0	87	100	0	187	655	137	0	0	792	1304
% App. Total	0	0	0	0	0	92.9	0.9	6.2	0		0	46.5	53.5	0		82.7	17.3	0	0		
PHF	.000	.000	.000	.000	.000	.821	.375	.500	.000	.797	.000	.837	.641	.000	.754	.969	.901	.000	.000	.961	.967



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TMC Data
Ridgewalk Pkwy @ I-575 NB Off-Ramp
12-2pm Sat

File Name : 37680002
Site Code : 37680002
Start Date : 11/21/2015
Page No : 1

Groups Printed- Cars, Buses, Trucks

	I-575 NB Off-Ramp Northbound					Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 PM	21	0	221	0	242	0	0	0	0	0	6	73	0	0	79	0	169	56	0	225	546
12:15 PM	20	0	199	0	219	0	0	0	0	0	9	73	0	0	82	0	174	67	0	241	542
12:30 PM	17	0	221	0	238	0	0	0	0	0	9	94	0	0	103	0	180	55	0	235	576
12:45 PM	21	0	201	0	222	0	0	0	0	0	6	98	0	0	104	0	172	58	0	230	556
Total	79	0	842	0	921	0	0	0	0	0	30	338	0	0	368	0	695	236	0	931	2220
01:00 PM	19	0	171	0	190	0	0	0	0	0	8	95	0	0	103	0	202	72	0	274	567
01:15 PM	16	0	199	0	215	0	0	0	0	0	2	80	0	0	82	0	183	66	0	249	546
01:30 PM	20	0	205	0	225	0	0	0	0	0	13	84	0	0	97	0	177	76	0	253	575
01:45 PM	22	0	208	0	230	0	0	0	0	0	9	74	0	0	83	0	164	63	0	227	540
Total	77	0	783	0	860	0	0	0	0	0	32	333	0	0	365	0	726	277	0	1003	2228
Grand Total	156	0	1625	0	1781	0	0	0	0	0	62	671	0	0	733	0	1421	513	0	1934	4448
Apprch %	8.8	0	91.2	0		0	0	0	0		8.5	91.5	0	0		0	73.5	26.5	0		
Total %	3.5	0	36.5	0	40	0	0	0	0	0	1.4	15.1	0	0	16.5	0	31.9	11.5	0	43.5	

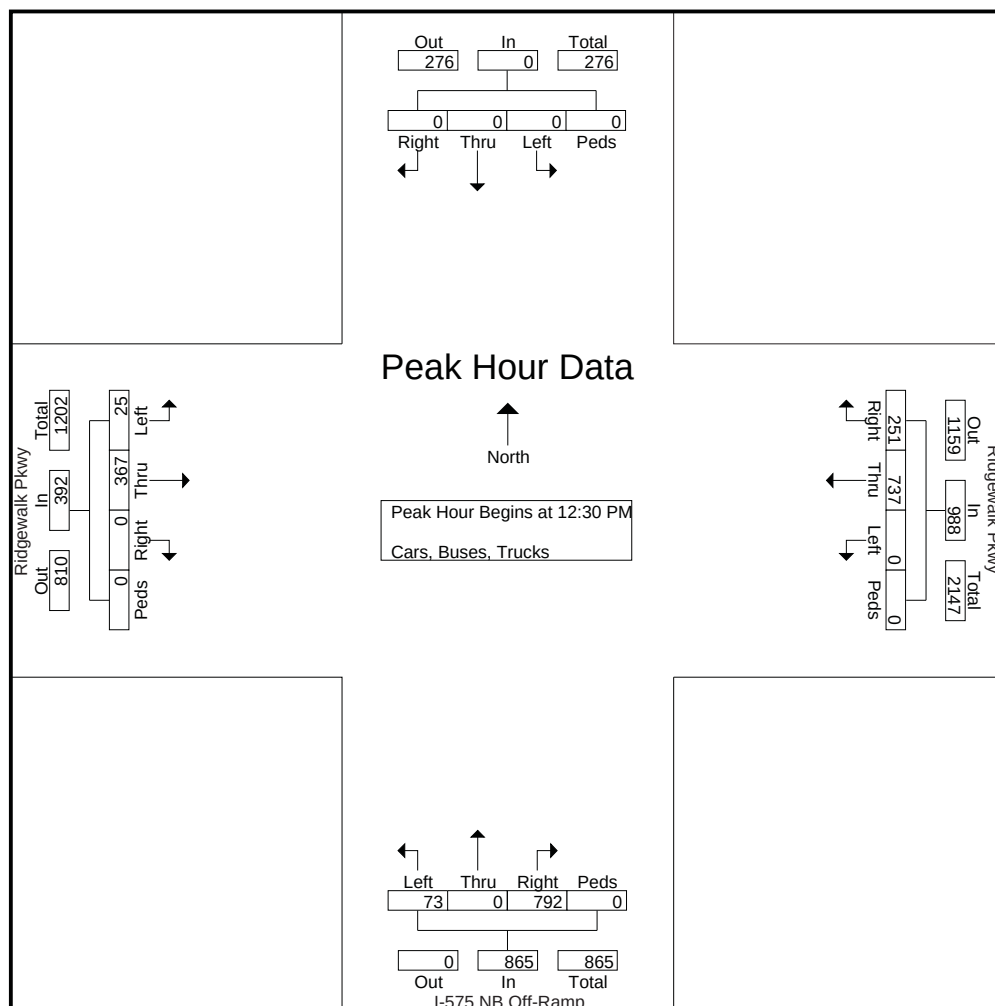
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TMC Data
Ridgewalk Pkwy @ I-575 NB Off-Ramp
12-2pm Sat

File Name : 37680002
Site Code : 37680002
Start Date : 11/21/2015
Page No : 2

	I-575 NB Off-Ramp Northbound					Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:30 PM																					
12:30 PM	17	0	221	0	238	0	0	0	0	0	9	94	0	0	103	0	180	55	0	235	576
12:45 PM	21	0	201	0	222	0	0	0	0	0	6	98	0	0	104	0	172	58	0	230	556
01:00 PM	19	0	171	0	190	0	0	0	0	0	8	95	0	0	103	0	202	72	0	274	567
01:15 PM	16	0	199	0	215	0	0	0	0	0	2	80	0	0	82	0	183	66	0	249	546
Total Volume	73	0	792	0	865	0	0	0	0	0	25	367	0	0	392	0	737	251	0	988	2245
% App. Total	8.4	0	91.6	0		0	0	0	0		6.4	93.6	0	0		0	74.6	25.4	0		
PHF	.869	.000	.896	.000	.909	.000	.000	.000	.000	.000	.694	.936	.000	.000	.942	.000	.912	.872	.000	.901	.974



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TMC Data
Ridgewalk Pkwy @ Old Rope Mill Park Rd/
The Outlet Shoppes Drwy
12-2pm Sat

File Name : 37680003
Site Code : 37680003
Start Date : 11/21/2015
Page No : 1

Groups Printed- Cars, Buses, Trucks

	The Outlet Shoppes Drwy Northbound					Old Rope Mill Park Rd Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 PM	92	7	32	0	131	7	5	16	0	28	16	88	177	0	281	31	110	17	0	158	598
12:15 PM	104	7	43	0	154	5	14	29	0	48	19	95	159	0	273	42	106	15	0	163	638
12:30 PM	110	6	35	0	151	10	5	29	0	44	26	121	178	0	325	50	109	15	0	174	694
12:45 PM	111	4	41	0	156	15	4	31	0	50	18	97	175	0	290	29	92	11	0	132	628
Total	417	24	151	0	592	37	28	105	0	170	79	401	689	0	1169	152	417	58	0	627	2558
01:00 PM	138	12	44	0	194	11	3	34	0	48	26	71	166	0	263	31	91	10	0	132	637
01:15 PM	115	11	42	0	168	8	3	37	0	48	19	82	183	0	284	30	102	14	0	146	646
01:30 PM	131	6	33	0	170	9	6	26	0	41	23	89	197	0	309	22	107	14	0	143	663
01:45 PM	122	6	47	0	175	10	7	25	0	42	24	84	164	0	272	26	83	13	0	122	611
Total	506	35	166	0	707	38	19	122	0	179	92	326	710	0	1128	109	383	51	0	543	2557
Grand Total	923	59	317	0	1299	75	47	227	0	349	171	727	1399	0	2297	261	800	109	0	1170	5115
Apprch %	71.1	4.5	24.4	0		21.5	13.5	65	0		7.4	31.6	60.9	0		22.3	68.4	9.3	0		
Total %	18	1.2	6.2	0	25.4	1.5	0.9	4.4	0	6.8	3.3	14.2	27.4	0	44.9	5.1	15.6	2.1	0	22.9	

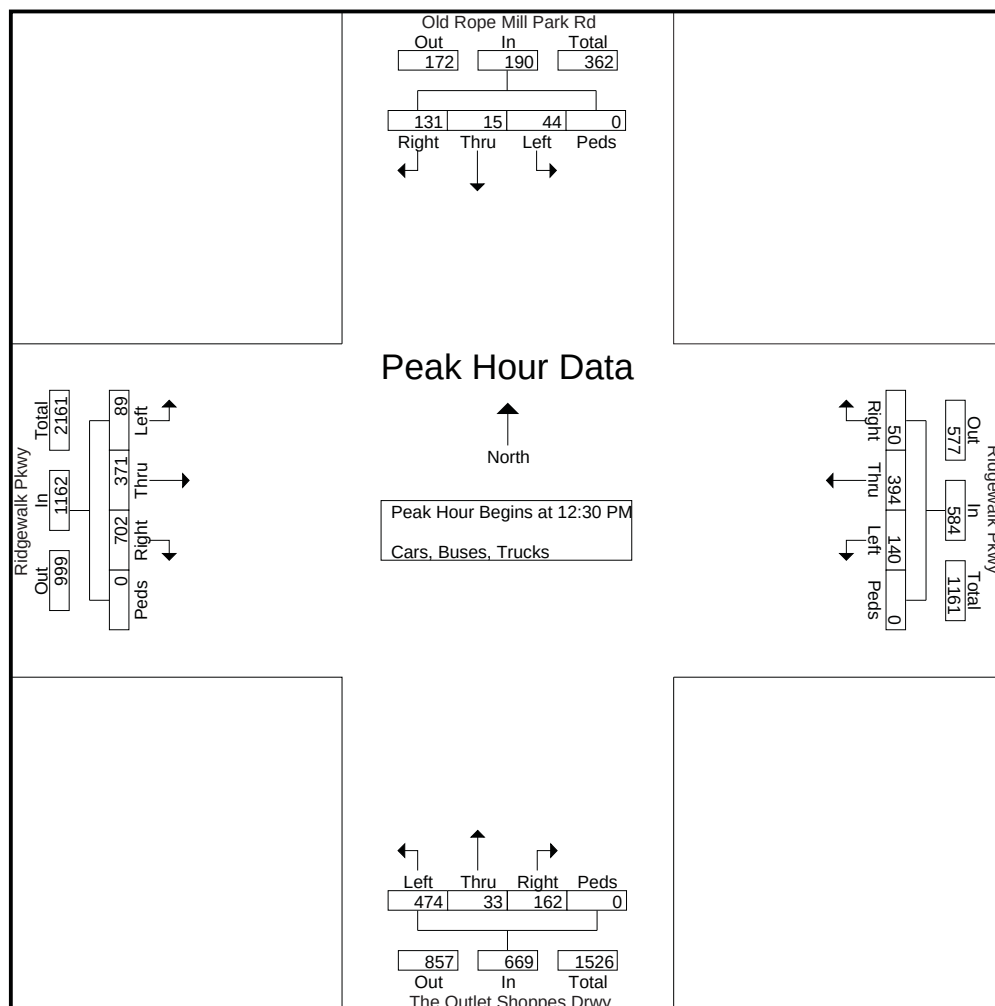
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TMC Data
Ridgewalk Pkwy @ Old Rope Mill Park Rd/
The Outlet Shoppes Drwy
12-2pm Sat

File Name : 37680003
Site Code : 37680003
Start Date : 11/21/2015
Page No : 2

	The Outlet Shoppes Drwy Northbound					Old Rope Mill Park Rd Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:30 PM																					
12:30 PM	110	6	35	0	151	10	5	29	0	44	26	121	178	0	325	50	109	15	0	174	694
12:45 PM	111	4	41	0	156	15	4	31	0	50	18	97	175	0	290	29	92	11	0	132	628
01:00 PM	138	12	44	0	194	11	3	34	0	48	26	71	166	0	263	31	91	10	0	132	637
01:15 PM	115	11	42	0	168	8	3	37	0	48	19	82	183	0	284	30	102	14	0	146	646
Total Volume	474	33	162	0	669	44	15	131	0	190	89	371	702	0	1162	140	394	50	0	584	2605
% App. Total	70.9	4.9	24.2	0		23.2	7.9	68.9	0		7.7	31.9	60.4	0		24	67.5	8.6	0		
PHF	.859	.688	.920	.000	.862	.733	.750	.885	.000	.950	.856	.767	.959	.000	.894	.700	.904	.833	.000	.839	.938



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TMC Data
Ridgewalk Pkwy @ Woodstock Pkwy/
Meridian Dr
12-2pm Sat

File Name : 37680004
Site Code : 37680004
Start Date : 11/21/2015
Page No : 1

Groups Printed- Cars, Buses, Trucks

	Woodstock Pkwy Northbound					Meridian Dr Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 PM	14	0	25	0	39	2	0	2	0	4	2	119	11	0	132	32	148	0	0	180	355
12:15 PM	10	0	27	0	37	1	1	2	0	4	4	119	8	0	131	37	148	0	0	185	357
12:30 PM	10	0	22	0	32	2	0	1	0	3	4	156	17	0	177	35	160	1	0	196	408
12:45 PM	14	2	25	0	41	1	1	2	0	4	1	138	14	0	153	31	125	0	0	156	354
Total	48	2	99	0	149	6	2	7	0	15	11	532	50	0	593	135	581	1	0	717	1474
01:00 PM	25	0	21	0	46	1	1	4	0	6	4	124	9	0	137	32	114	4	0	150	339
01:15 PM	13	1	19	0	33	0	0	3	0	3	2	116	15	0	133	25	123	2	0	150	319
01:30 PM	9	0	18	0	27	1	1	2	0	4	3	118	14	0	135	28	125	0	0	153	319
01:45 PM	9	0	21	0	30	0	0	0	0	0	1	123	13	0	137	19	122	0	0	141	308
Total	56	1	79	0	136	2	2	9	0	13	10	481	51	0	542	104	484	6	0	594	1285
Grand Total	104	3	178	0	285	8	4	16	0	28	21	1013	101	0	1135	239	1065	7	0	1311	2759
Apprch %	36.5	1.1	62.5	0		28.6	14.3	57.1	0		1.9	89.3	8.9	0		18.2	81.2	0.5	0		
Total %	3.8	0.1	6.5	0	10.3	0.3	0.1	0.6	0	1	0.8	36.7	3.7	0	41.1	8.7	38.6	0.3	0	47.5	

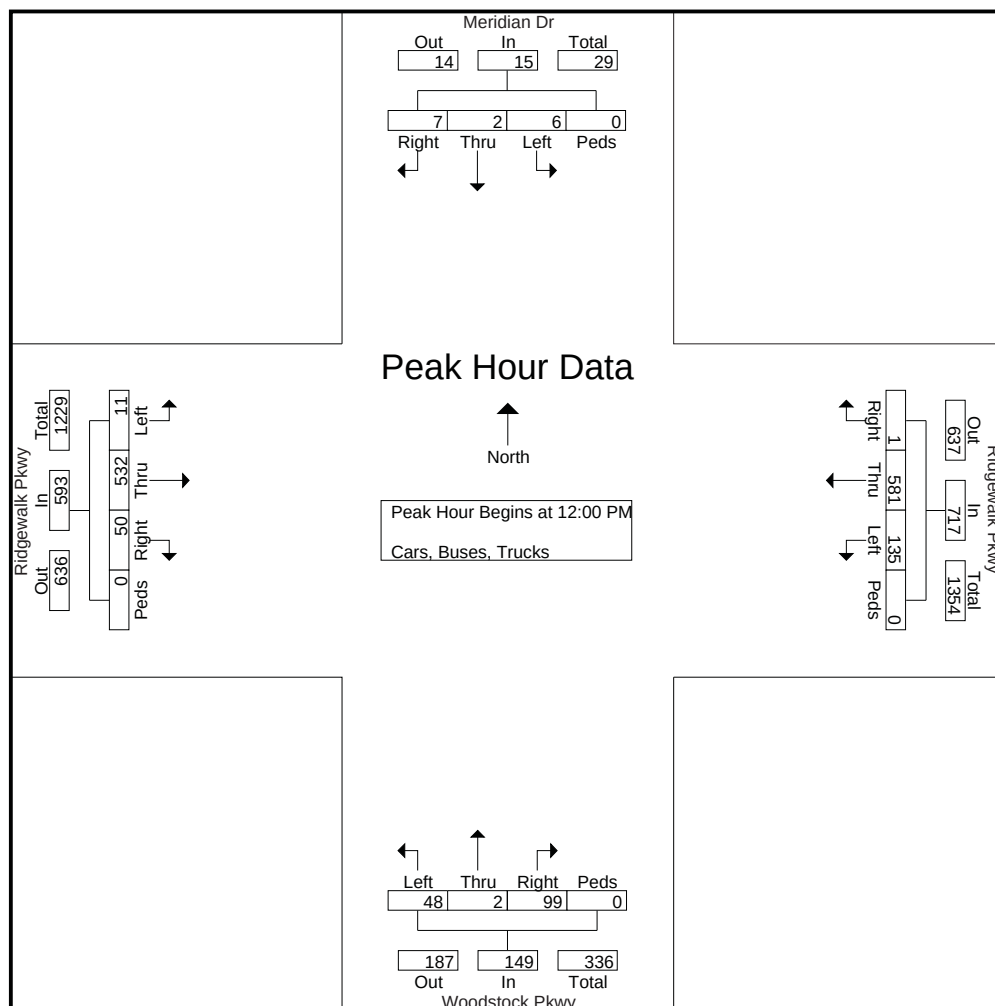
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TMC Data
Ridgewalk Pkwy @ Woodstock Pkwy/
Meridian Dr
12-2pm Sat

File Name : 37680004
Site Code : 37680004
Start Date : 11/21/2015
Page No : 2

	Woodstock Pkwy Northbound					Meridian Dr Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	14	0	25	0	39	2	0	2	0	4	2	119	11	0	132	32	148	0	0	180	355
12:15 PM	10	0	27	0	37	1	1	2	0	4	4	119	8	0	131	37	148	0	0	185	357
12:30 PM	10	0	22	0	32	2	0	1	0	3	4	156	17	0	177	35	160	1	0	196	408
12:45 PM	14	2	25	0	41	1	1	2	0	4	1	138	14	0	153	31	125	0	0	156	354
Total Volume	48	2	99	0	149	6	2	7	0	15	11	532	50	0	593	135	581	1	0	717	1474
% App. Total	32.2	1.3	66.4	0		40	13.3	46.7	0		1.9	89.7	8.4	0		18.8	81	0.1	0		
PHF	.857	.250	.917	.000	.909	.750	.500	.875	.000	.938	.688	.853	.735	.000	.838	.912	.908	.250	.000	.915	.903



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TMC Data
Ridgewalk Pkwy @ Ridge Trail
12-2pm Sat

File Name : 37680005
Site Code : 37680005
Start Date : 11/21/2015
Page No : 1

Groups Printed- Cars, Buses, Trucks

	Ridge Trail Northbound					Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 PM	30	0	4	0	34	0	0	0	0	0	0	124	28	0	152	7	141	0	0	148	334
12:15 PM	38	0	9	0	47	0	0	0	0	0	0	119	27	0	146	10	146	0	0	156	349
12:30 PM	31	0	8	0	39	0	0	0	0	0	0	131	46	0	177	10	167	0	0	177	393
12:45 PM	21	0	12	0	33	0	0	0	0	0	0	138	31	0	169	20	134	0	0	154	356
Total	120	0	33	0	153	0	0	0	0	0	0	512	132	0	644	47	588	0	0	635	1432
01:00 PM	21	0	15	0	36	0	0	0	0	0	0	134	24	0	158	14	122	0	0	136	330
01:15 PM	29	0	17	0	46	0	0	0	0	0	0	112	27	0	139	6	118	0	0	124	309
01:30 PM	39	0	6	0	45	0	0	0	0	0	0	105	31	0	136	8	115	0	0	123	304
01:45 PM	24	0	7	0	31	0	0	0	0	0	0	122	30	0	152	10	119	0	0	129	312
Total	113	0	45	0	158	0	0	0	0	0	0	473	112	0	585	38	474	0	0	512	1255
Grand Total	233	0	78	0	311	0	0	0	0	0	0	985	244	0	1229	85	1062	0	0	1147	2687
Apprch %	74.9	0	25.1	0		0	0	0	0		0	80.1	19.9	0		7.4	92.6	0	0		
Total %	8.7	0	2.9	0	11.6	0	0	0	0	0	0	36.7	9.1	0	45.7	3.2	39.5	0	0	42.7	

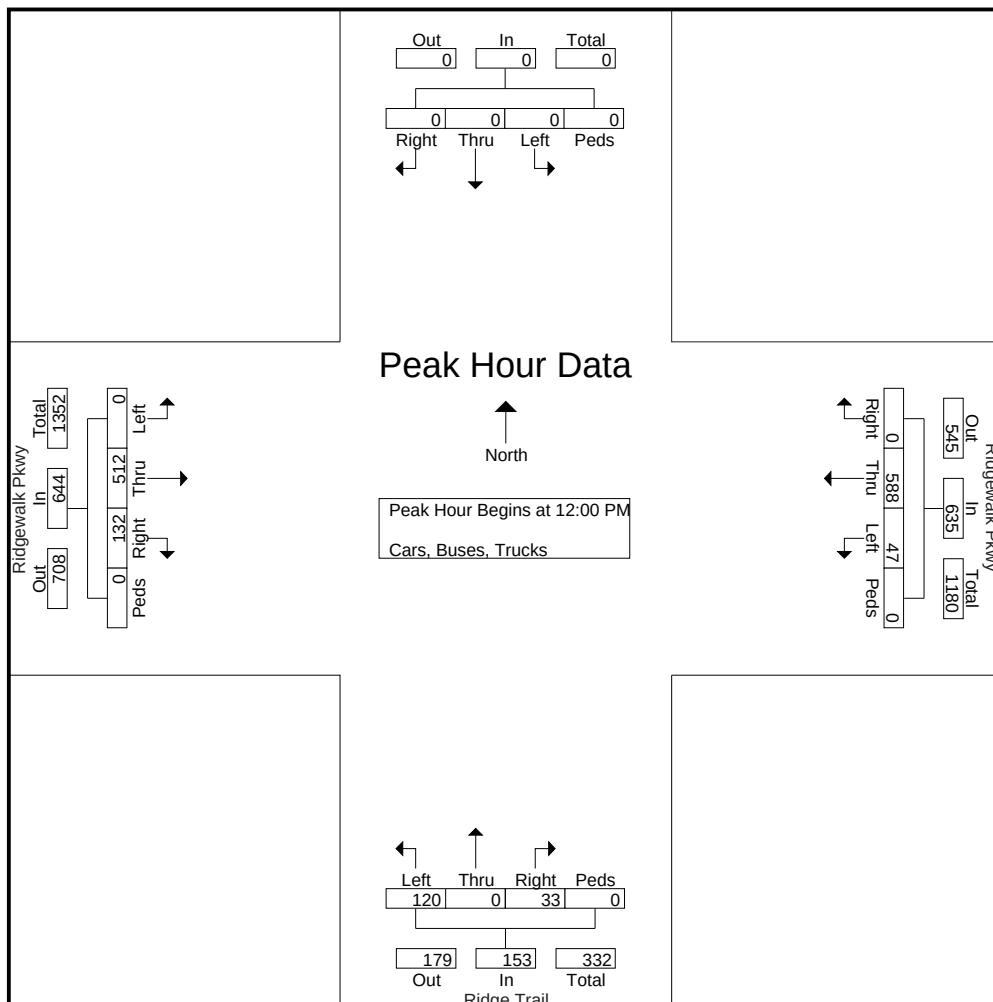
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TMC Data
Ridgewalk Pkwy @ Ridge Trail
12-2pm Sat

File Name : 37680005
Site Code : 37680005
Start Date : 11/21/2015
Page No : 2

	Ridge Trail Northbound					Southbound					Ridgewalk Pkwy Eastbound					Ridgewalk Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	30	0	4	0	34	0	0	0	0	0	0	124	28	0	152	7	141	0	0	148	334
12:15 PM	38	0	9	0	47	0	0	0	0	0	0	119	27	0	146	10	146	0	0	156	349
12:30 PM	31	0	8	0	39	0	0	0	0	0	0	131	46	0	177	10	167	0	0	177	393
12:45 PM	21	0	12	0	33	0	0	0	0	0	0	138	31	0	169	20	134	0	0	154	356
Total Volume	120	0	33	0	153	0	0	0	0	0	0	512	132	0	644	47	588	0	0	635	1432
% App. Total	78.4	0	21.6	0		0	0	0	0		0	79.5	20.5	0		7.4	92.6	0	0		
PHF	.789	.000	.688	.000	.814	.000	.000	.000	.000	.000	.000	.928	.717	.000	.910	.588	.880	.000	.000	.897	.911



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TMC Data
Main St @ E Cherokee Dr/
Publix Drwy
12-2pm Sat

File Name : 37680006
Site Code : 37680006
Start Date : 11/21/2015
Page No : 1

Groups Printed- Cars, Buses, Trucks

	Main St Northbound					Main St Southbound					Publix Drwy Eastbound					E Cherokee Dr Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 PM	14	63	73	0	150	61	52	1	0	114	16	12	21	0	49	87	21	56	0	164	477
12:15 PM	17	55	77	0	149	71	63	2	0	136	15	13	10	0	38	94	9	65	0	168	491
12:30 PM	19	46	82	0	147	80	62	1	0	143	10	16	8	0	34	106	14	57	0	177	501
12:45 PM	19	54	76	0	149	73	55	7	0	135	6	12	14	0	32	101	12	66	0	179	495
Total	69	218	308	0	595	285	232	11	0	528	47	53	53	0	153	388	56	244	0	688	1964
01:00 PM	21	50	78	0	149	70	64	4	0	138	9	14	6	0	29	87	12	52	0	151	467
01:15 PM	17	57	69	0	143	69	60	2	0	131	8	13	7	0	28	77	10	70	0	157	459
01:30 PM	19	37	72	0	128	74	47	1	0	122	12	11	5	0	28	86	10	66	0	162	440
01:45 PM	22	50	81	0	153	61	53	2	0	116	7	10	11	0	28	86	18	59	0	163	460
Total	79	194	300	0	573	274	224	9	0	507	36	48	29	0	113	336	50	247	0	633	1826
Grand Total	148	412	608	0	1168	559	456	20	0	1035	83	101	82	0	266	724	106	491	0	1321	3790
Apprch %	12.7	35.3	52.1	0		54	44.1	1.9	0		31.2	38	30.8	0		54.8	8	37.2	0		
Total %	3.9	10.9	16	0	30.8	14.7	12	0.5	0	27.3	2.2	2.7	2.2	0	7	19.1	2.8	13	0	34.9	

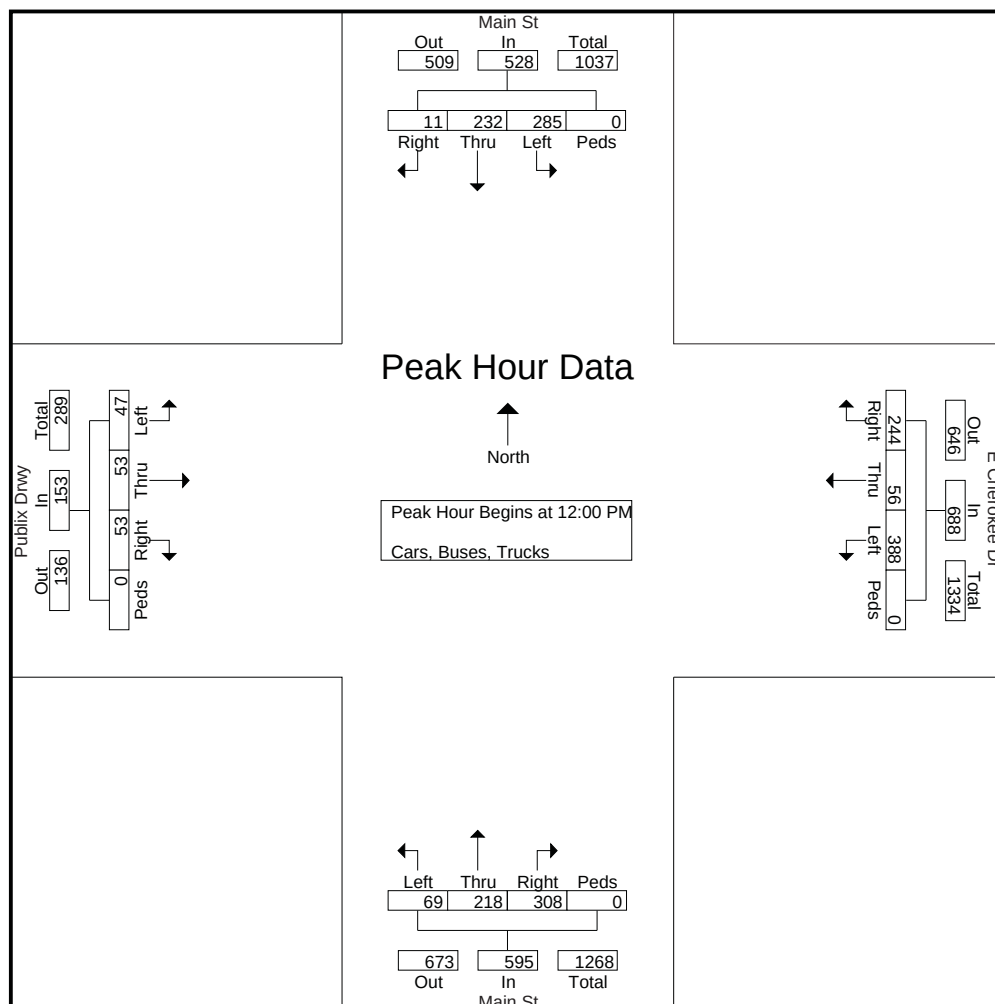
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TMC Data
Main St @ E Cherokee Dr/
Publix Drwy
12-2pm Sat

File Name : 37680006
Site Code : 37680006
Start Date : 11/21/2015
Page No : 2

	Main St Northbound					Main St Southbound					Publix Drwy Eastbound					E Cherokee Dr Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	14	63	73	0	150	61	52	1	0	114	16	12	21	0	49	87	21	56	0	164	477
12:15 PM	17	55	77	0	149	71	63	2	0	136	15	13	10	0	38	94	9	65	0	168	491
12:30 PM	19	46	82	0	147	80	62	1	0	143	10	16	8	0	34	106	14	57	0	177	501
12:45 PM	19	54	76	0	149	73	55	7	0	135	6	12	14	0	32	101	12	66	0	179	495
Total Volume	69	218	308	0	595	285	232	11	0	528	47	53	53	0	153	388	56	244	0	688	1964
% App. Total	11.6	36.6	51.8	0		54	43.9	2.1	0		30.7	34.6	34.6	0		56.4	8.1	35.5	0		
PHF	.908	.865	.939	.000	.992	.891	.921	.393	.000	.923	.734	.828	.631	.000	.781	.915	.667	.924	.000	.961	.980



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TMC Data
Main St @ Rope Mill Rd/
E Main St
12-2pm Sat

File Name : 37680007
Site Code : 37680007
Start Date : 11/21/2015
Page No : 1

Groups Printed- Cars, Buses, Trucks

	Main St Northbound					Main St Southbound					Rope Mill Rd Eastbound					E Main St Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 PM	14	71	4	0	89	1	84	3	0	88	4	0	31	0	35	2	1	1	0	4	216
12:15 PM	13	74	0	0	87	0	92	0	0	92	2	0	23	0	25	4	1	0	0	5	209
12:30 PM	18	70	4	0	92	1	99	3	0	103	3	0	24	0	27	2	1	0	0	3	225
12:45 PM	33	83	3	0	119	0	91	5	0	96	1	0	31	0	32	4	0	0	0	4	251
Total	78	298	11	0	387	2	366	11	0	379	10	0	109	0	119	12	3	1	0	16	901
01:00 PM	8	64	7	0	79	0	109	3	0	112	3	0	25	0	28	9	1	0	0	10	229
01:15 PM	14	90	2	0	106	0	103	3	0	106	0	0	20	0	20	2	0	0	0	2	234
01:30 PM	16	67	4	0	87	2	88	2	0	92	1	1	21	0	23	7	2	0	0	9	211
01:45 PM	17	86	0	0	103	0	73	0	0	73	2	1	23	0	26	14	0	0	0	14	216
Total	55	307	13	0	375	2	373	8	0	383	6	2	89	0	97	32	3	0	0	35	890
Grand Total	133	605	24	0	762	4	739	19	0	762	16	2	198	0	216	44	6	1	0	51	1791
Apprch %	17.5	79.4	3.1	0		0.5	97	2.5	0		7.4	0.9	91.7	0		86.3	11.8	2	0		
Total %	7.4	33.8	1.3	0	42.5	0.2	41.3	1.1	0	42.5	0.9	0.1	11.1	0	12.1	2.5	0.3	0.1	0	2.8	

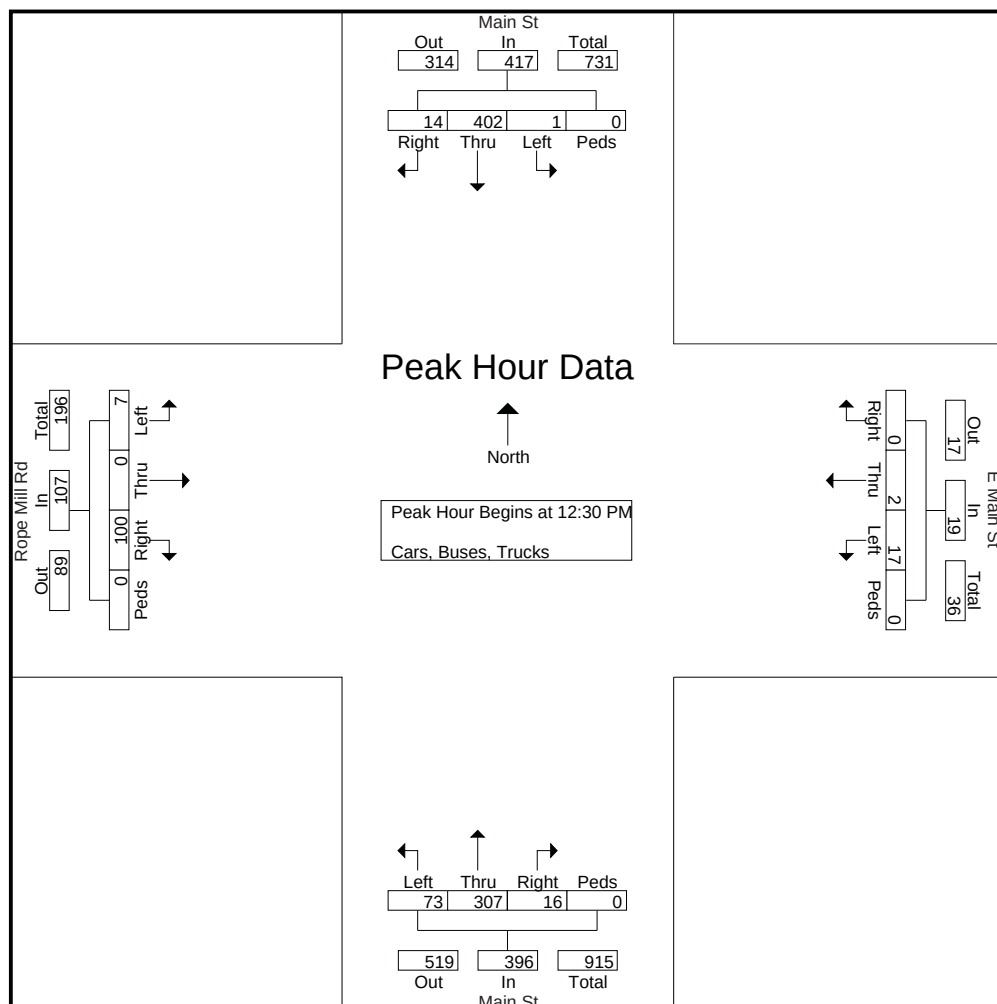
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TMC Data
Main St @ Rope Mill Rd/
E Main St
12-2pm Sat

File Name : 37680007
Site Code : 37680007
Start Date : 11/21/2015
Page No : 2

	Main St Northbound					Main St Southbound					Rope Mill Rd Eastbound					E Main St Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:30 PM																					
12:30 PM	18	70	4	0	92	1	99	3	0	103	3	0	24	0	27	2	1	0	0	3	225
12:45 PM	33	83	3	0	119	0	91	5	0	96	1	0	31	0	32	4	0	0	0	4	251
01:00 PM	8	64	7	0	79	0	109	3	0	112	3	0	25	0	28	9	1	0	0	10	229
01:15 PM	14	90	2	0	106	0	103	3	0	106	0	0	20	0	20	2	0	0	0	2	234
Total Volume	73	307	16	0	396	1	402	14	0	417	7	0	100	0	107	17	2	0	0	19	939
% App. Total	18.4	77.5	4	0		0.2	96.4	3.4	0		6.5	0	93.5	0		89.5	10.5	0	0		
PHF	.553	.853	.571	.000	.832	.250	.922	.700	.000	.931	.583	.000	.806	.000	.836	.472	.500	.000	.000	.475	.935



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TMC Data
Woodstock Pkwy @ Rope Mill Rd/
The Outlet Shoppes Drwy
12-2pm Sat

File Name : 37680008
Site Code : 37680008
Start Date : 11/21/2015
Page No : 1

Groups Printed- Cars, Buses, Trucks

	Woodstock Pkwy Northbound					Woodstock Pkwy Southbound					The Outlet Shoppes Drwy Eastbound					Rope Mill Rd Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 PM	25	17	8	0	50	10	12	6	0	28	4	6	14	0	24	10	4	18	0	32	134
12:15 PM	14	20	7	0	41	7	10	5	0	22	6	5	18	0	29	8	5	13	0	26	118
12:30 PM	17	18	8	0	43	8	4	3	0	15	10	12	22	0	44	3	4	12	0	19	121
12:45 PM	19	19	4	0	42	9	9	4	0	22	9	9	17	0	35	5	8	20	0	33	132
Total	75	74	27	0	176	34	35	18	0	87	29	32	71	0	132	26	21	63	0	110	505
01:00 PM	25	15	5	0	45	9	6	3	0	18	20	8	28	0	56	2	9	10	0	21	140
01:15 PM	19	17	10	0	46	6	6	4	0	16	14	8	22	0	44	5	6	12	0	23	129
01:30 PM	29	21	7	0	57	9	10	2	0	21	3	6	23	0	32	5	4	6	0	15	125
01:45 PM	24	17	5	0	46	5	8	7	0	20	10	22	18	0	50	4	9	7	0	20	136
Total	97	70	27	0	194	29	30	16	0	75	47	44	91	0	182	16	28	35	0	79	530
Grand Total	172	144	54	0	370	63	65	34	0	162	76	76	162	0	314	42	49	98	0	189	1035
Apprch %	46.5	38.9	14.6	0		38.9	40.1	21	0		24.2	24.2	51.6	0		22.2	25.9	51.9	0		
Total %	16.6	13.9	5.2	0	35.7	6.1	6.3	3.3	0	15.7	7.3	7.3	15.7	0	30.3	4.1	4.7	9.5	0	18.3	

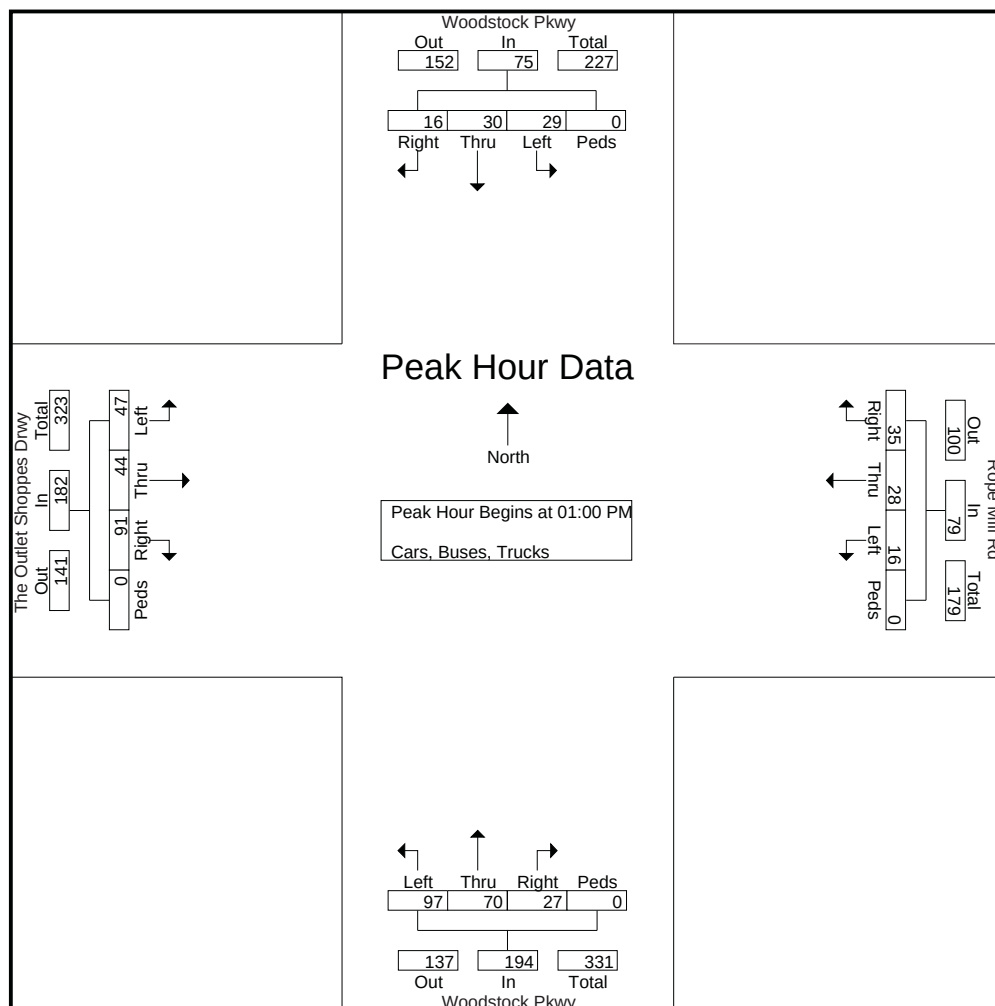
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TMC Data
Woodstock Pkwy @ Rope Mill Rd/
The Outlet Shoppes Drwy
12-2pm Sat

File Name : 37680008
Site Code : 37680008
Start Date : 11/21/2015
Page No : 2

	Woodstock Pkwy Northbound					Woodstock Pkwy Southbound					The Outlet Shoppes Drwy Eastbound					Rope Mill Rd Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 01:00 PM																					
01:00 PM	25	15	5	0	45	9	6	3	0	18	20	8	28	0	56	2	9	10	0	21	140
01:15 PM	19	17	10	0	46	6	6	4	0	16	14	8	22	0	44	5	6	12	0	23	129
01:30 PM	29	21	7	0	57	9	10	2	0	21	3	6	23	0	32	5	4	6	0	15	125
01:45 PM	24	17	5	0	46	5	8	7	0	20	10	22	18	0	50	4	9	7	0	20	136
Total Volume	97	70	27	0	194	29	30	16	0	75	47	44	91	0	182	16	28	35	0	79	530
% App. Total	50	36.1	13.9	0		38.7	40	21.3	0		25.8	24.2	50	0		20.3	35.4	44.3	0		
PHF	.836	.833	.675	.000	.851	.806	.750	.571	.000	.893	.588	.500	.813	.000	.813	.800	.778	.729	.000	.859	.946



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TMC Data
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12-2pm Sat

File Name : 37680009
Site Code : 37680009
Start Date : 11/21/2015
Page No : 1

Groups Printed- Cars, Buses, Trucks

	Main St Northbound					Main St Southbound					Ridgewalk Pkwy Eastbound					Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 PM	20	62	0	0	82	0	85	128	0	213	110	0	20	0	130	0	0	0	0	0	425
12:15 PM	27	45	0	0	72	0	77	126	0	203	101	0	24	0	125	0	0	0	0	0	400
12:30 PM	30	56	0	0	86	0	79	148	0	227	96	0	33	0	129	0	0	0	0	0	442
12:45 PM	28	59	0	0	87	0	62	121	0	183	123	0	28	0	151	0	0	0	0	0	421
Total	105	222	0	0	327	0	303	523	0	826	430	0	105	0	535	0	0	0	0	0	1688
01:00 PM	31	57	0	0	88	0	65	104	0	169	114	0	39	0	153	0	0	0	0	0	410
01:15 PM	26	73	0	0	99	0	66	89	0	155	98	0	31	0	129	0	0	0	0	0	383
01:30 PM	23	62	0	0	85	0	67	95	0	162	93	0	17	0	110	0	0	0	0	0	357
01:45 PM	28	68	0	0	96	0	58	107	0	165	116	0	21	0	137	0	0	0	0	0	398
Total	108	260	0	0	368	0	256	395	0	651	421	0	108	0	529	0	0	0	0	0	1548
Grand Total	213	482	0	0	695	0	559	918	0	1477	851	0	213	0	1064	0	0	0	0	0	3236
Apprch %	30.6	69.4	0	0		0	37.8	62.2	0		80	0	20	0		0	0	0	0	0	
Total %	6.6	14.9	0	0	21.5	0	17.3	28.4	0	45.6	26.3	0	6.6	0	32.9	0	0	0	0	0	

Reliable Traffic Data Services, LLC

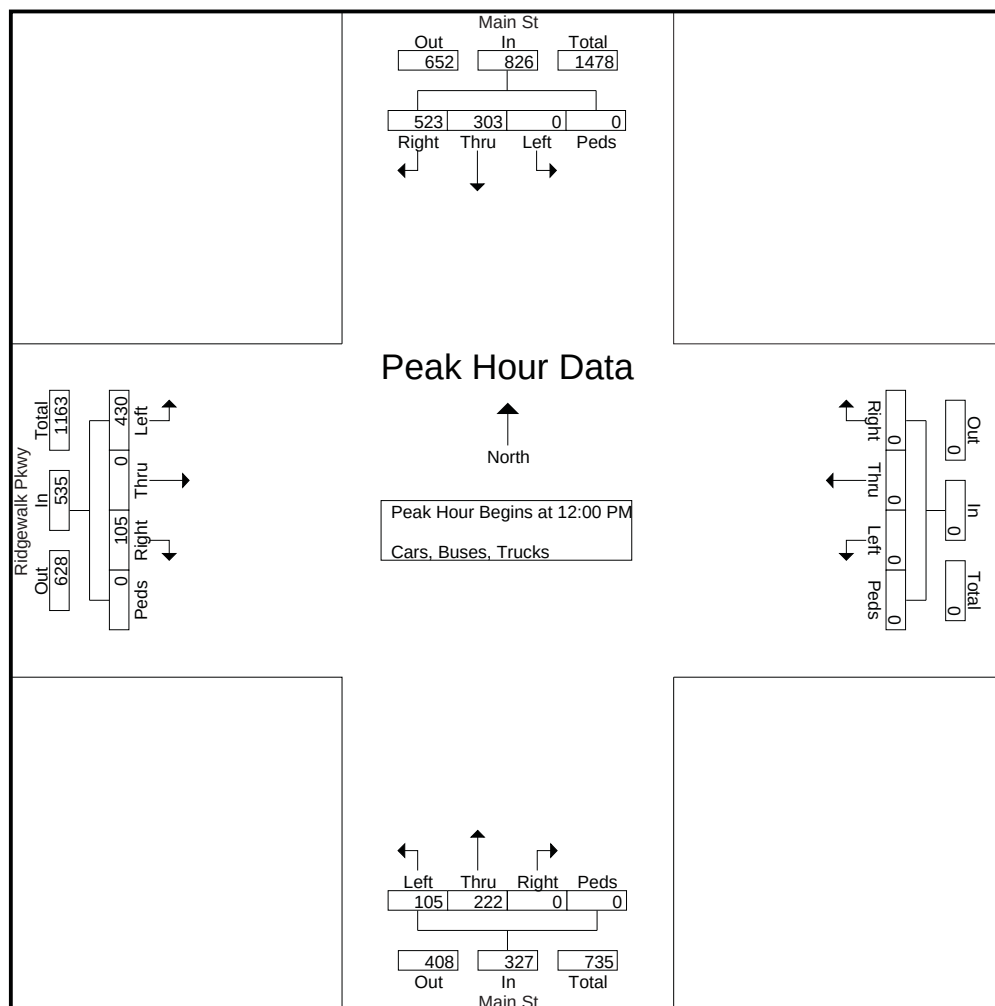
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TMC Data
Ridgewalk Pkwy @ Main St

12-2pm Sat

File Name : 37680009
Site Code : 37680009
Start Date : 11/21/2015
Page No : 2

	Main St Northbound					Main St Southbound					Ridgewalk Pkwy Eastbound					Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	20	62	0	0	82	0	85	128	0	213	110	0	20	0	130	0	0	0	0	0	425
12:15 PM	27	45	0	0	72	0	77	126	0	203	101	0	24	0	125	0	0	0	0	0	400
12:30 PM	30	56	0	0	86	0	79	148	0	227	96	0	33	0	129	0	0	0	0	0	442
12:45 PM	28	59	0	0	87	0	62	121	0	183	123	0	28	0	151	0	0	0	0	0	421
Total Volume	105	222	0	0	327	0	303	523	0	826	430	0	105	0	535	0	0	0	0	0	1688
% App. Total	32.1	67.9	0	0		0	36.7	63.3	0		80.4	0	19.6	0		0	0	0	0		
PHF	.875	.895	.000	.000	.940	.000	.891	.883	.000	.910	.874	.000	.795	.000	.886	.000	.000	.000	.000	.000	.955



Seasonal Adjustment to Count Data

15-122 Mixed Use Development-Ridgewalk Pkwy- Woodstock GA

Volume Adjustment
Future Conditions

A&R Engineering
January 2016

5 Ridgewalk Pkwy @ Ridge Trail

A.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
November 17	78	2	82	162	2	5	6	13	1	463	185	649
November 24	22	0	31	53	1	4	6	11	5	401	57	463
Adjustment Factor	3.5	1.0	2.6	3.1	2.0	1.3	1.0	1.2	0.2	1.2	3.2	1.4

P.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
November 17	107	7	179	293	1	2	5	8	10	620	57	687
November 24	108	5	151	264	3	2	8	13	10	539	50	599
Adjustment Factor	1.0	1.4	1.2	1.1	0.3	1.0	0.6	0.6	1.0	1.2	1.1	1.1

AM Peak Hour

	11/17	11/24	Delta	Adj.
Northbound Towards Ridgewalk Pkwy	162	53	+109	3.1
Southbound Towards Rope Mill Rd	389	129	+260	3.0
Average	551	182	+369	3.0

PM Peak Hour

	11/17	11/24	Delta	Adj.
Northbound Towards Ridgewalk Pkwy	293	264	+29	1.1
Southbound Towards Rope Mill Rd	147	140	+7	1.1
Average	440	404	+36	1.1

8 Woodstock Pkwy @ Rope Mill Rd

A.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
November 24	20	33	15	68	19	67	9	95	8	12	13	33
Adjustment Factor	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	3.0	
Revised Volumes	60	99	45	204	57	201	27	285	24	36	39	99

P.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
November 24	37	157	17	211	32	39	9	80	16	29	70	115
Adjustment Factor	1.1	1.1	1.1		1.1	1.1	1.1		1.1	1.1	1.1	
Revised Volumes	41	173	19	233	35	43	10	88	18	32	77	127

GRTA Letter of Understanding



LETTER OF UNDERSTANDING

November 25, 2015

Tom Rumptz
Horizon Group Properties
5000 Hakes Drive
Suite 500
Muskegon, Michigan 49441

RE: **DRI 2520 Ridgewalk Landing**

Dear Mr. Rumptz:

The purpose of this letter is to document the discussions during the Pre-Review and Methodology Meeting held at ARC's office on November 23, 2015 regarding **DRI 2520 Ridgewalk Landing**. Some of the following items were discussed in this meeting and should assist you and your consultant team in preparing the DRI Review Package.

PROJECT OVERVIEW

- The project is located in the City of Woodstock. The proposed development is located on the north side of Ridgewalk Parkway, east of I-575 and roughly between Woodstock Parkway and Main Street.
- The DRI trigger for this development is a rezoning.
- The proposed development is consisting of approximately 245,000 square feet of commercial retail/shopping center and 300 apartment units.
- The estimated vehicular trip generation is 14,101 gross daily trips based on the ITE *Trip Generation Manual, 9th Edition, 2012*.
- The projected build out for this DRI is 2020 in one phase.
- The applicant is applying for approval under GRTA's non-expedited review process.

METHODOLOGY

- All intersections identified as within the study network shall be analyzed during the AM, PM and Saturday peak hours for (1) existing conditions, (2) future "no-build" conditions [may not be applicable for the site driveways], and (3) future "build" conditions. This DRI shall be reviewed in one phase to be completed by 2020.
- Capacity analysis shall be based on turning movement counts collected not more than 12-months prior to the date of the actual DRI submittal to GRTA. As appropriate, pedestrian counts and heavy vehicle counts shall be collected with vehicle counts and considered within the capacity analysis. Turning movement counts shall be collected while local schools are in session and ordinarily not between the week of Thanksgiving and the second week of January or any week of a major holiday.
- A 2.0% background traffic growth rate shall be used for all roadways.
- The level of service standard for all analyses shall be LOS D.

- Mixed use and pass-by trip reductions are allowed. A 2% alternative mode reduction is allowed due to accessibility to the City's Greenprints Trail System across the street.
- Default values should not be assumed in the traffic modeling. Existing conditions shall be taken into account.
- The applicant shall research TIP, STIP, RTP, and GDOT's construction work program, as well as any local government plans (SPLOST, CIP, etc.), to determine the open-to-traffic date, sponsor, cost of the project, funding source(s), for future roadway projects in the project vicinity. This information shall be included within the traffic analysis. Cherokee County's SPLOST project for Intersection 7 below can be assumed completed for the build and no-build scenarios.

STUDY NETWORK

1. I-575 Southbound Ramps @ Ridgewalk Parkway
2. I-575 Northbound Ramps @ Ridgewalk Parkway
3. Ridgewalk Parkway @ Rope Mill Road
4. Ridgewalk Parkway @ Woodstock Parkway
5. Ridgewalk Parkway @ Ridge Trail/New Site Driveway
6. Ridgewalk Parkway @ Main Street
7. Main Street/ Old Hwy 5 @ E Cherokee Drive
8. Woodstock Parkway @ Rope Mill Road/Outlet Mall (Roundabout)
9. All site driveways

ADDITIONAL INFORMATION

Every roadway segment and intersection listed above will be analyzed for "required improvements." If the existing LOS for the segment or intersection is below the applicable level of service for a particular time period (e.g., A.M. peak period, P.M. peak period, etc.), then the measured LOS service for that segment and time periods is the standard by which the "base" and "future" traffic conditions will be designed. For example, if the County's LOS standard is LOS D, but an intersection or segment currently operates at LOS E for a certain peak period, then the LOS standard for that intersection or segment for "base" and "future" conditions becomes LOS E (only for that intersection and only for that peak period). The "base" is the phase year traffic without the development traffic (also called future "no-build" conditions) and the "future" is the phase year with the development traffic (also called future "build" conditions). As required in the technical guidelines, specific "required improvements" will be identified to bring the "base" LOS and "future" LOS for every roadway segment and intersection up to the applicable LOS standard. If the existing LOS for the segment or intersection is LOS F, then the future "no-build" and future "build" LOS standard will be LOS E. The improvements required to achieve the desired LOS standard will be provided in a table and graphic within the study. The traffic study should indicate the existing roadway laneage at each studied intersection as well as the laneage required (to meet the LOS standard) for future "no-build" and future "build" conditions. The improvements may include both programmed improvements and improvements identified in the study.

The planned and programmed improvement should indicate the project sponsor, the anticipated funding by source (federal, state, city/county, developer, CID, etc.), the year open-to-traffic, and estimate of the total project cost. All other required improvements identified in the study should, to the extent known, identify the cost, sponsor, funding, and timing. If any of these elements are not known, please state as "unknown."

The future "no-build" and the future "build" analyses should NOT automatically include/assume the additional lanes/capacity associated with planned and programmed improvement projects unless those roadway projects are currently under construction. Instead, the traffic consultant should recommend the additional laneage required to satisfy the level of service standard.

DRI REVIEW PACKAGE CHECKLIST

Please use the DRI Review Package Checklist to help you prepare your GRTA DRI Review Package for expedited review of your application. The Checklist reflects the understandings set forth in this letter, and is incorporated into this letter by reference.

The site plan shall be prepared in accordance with Section 4-104 of the DRI Review Package Technical Guidelines and it shall be dated, and shall be at a scale of 1"= 200' or larger (showing more detail). The site plan shall be consistent with GRTA's Site Plan Information Guidelines, which represents the minimum required information on site plans.

The applicant shall indicate on the site plans all adjacent land uses, current zoning, and future land use as indicated on the future land use map. Additionally, all existing and proposed sidewalks, existing and proposed pedestrian trails, and existing and proposed roadway laneage should be indicated on the site plan.

DRI REVIEW PACKAGE SUBMITTAL

At the time you are ready to submit your DRI Review Package to GRTA, please note the following:

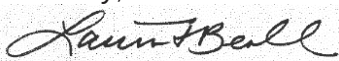
- Provide one (1) paper copy of all materials:
 - Transportation analysis
 - Site Plan
- Provide one (1) CD-ROM with electronic versions of all submittal documents:
 - Provide a PDF of each document
 - Provide the native format for each document
 - .dwg is the preferred CAD format (AutoCAD)
 - .doc is the preferred word processing format (Word)
 - .xls is the preferred spreadsheet format (Excel)
 - .sy6 or .sy7 is the preferred capacity analysis format (Synchro)

As part of the completeness certification process, please have your consultant forward one copy of the completed GRTA DRI Review Package (traffic analysis, site plan, CD) to the GDOT District Office, Regional Commission and local government Planning & Development and Transportation group (contact information provided below). GRTA shall be copied on each of the transmittal letters.

ATLANTA REGIONAL COMMISSION	GDOT DISTRICT 6	WOODSTOCK PLANNING AND ZONING	CHEROKEE COUNTY ENGINEERING
Jon Tuley 40 Courtland Street, NE Atlanta, GA 30303	Carla Ham 500 Joe Frank Harris Parkway P.O. Box 10 Cartersville, GA 30120-0010	Brantley Day 12453 Highway 92 Woodstock, GA 30188	Brett Buchanan 1130 Bluffs Parkway Canton, Georgia 30114

We encourage your consultant team to verify the items covered in this letter prior to compiling the submittal materials. If you have any questions, please feel free to contact me directly at 404-463-3068 (lbeall@grta.org).

Sincerely,



Laura F. Beall, AICP
Program Manager

cc:

Jon West, DCA
Jon Tuley, ARC
Carla Ham, GDOT District 6
Brett Buchanan, Cherokee County Engineering
Nancy Moon, City of Holly Springs

Brantley Day, City of Woodstock
Geoff Warr, A & R Engineering, Inc.
Steven Rowe, AEC
Curt Hammontree, CBL & Associates Properties, Inc.

Fact Sheets for Planned and Programmed Improvements

PRECONSTRUCTION STATUS REPORT

PROJECT DESCRIPTION		CONSULTANT/DESIGNER	PROPOSED LETTING DATE	DESIGN / PRECONSTRUCTION STATUS OR COMMENTS	R/W PARCELS (c/sld/reqd)	COMMENTS
ROADWAY IMPROVEMENTS						
SR 92 & Robin Road TE Project	SR 92 - Woodlands Drive to Santa Fe Trail and west side Robin Road	Keck & Wood, Inc.	12/17/2015	Construction plans complete, all GDOT approvals complete, Environmental approvals complete. Out to bid.	0/0	Project involves sidewalk improvements and median improvements and landscaping on SR 92 within the LCI corridor and also along the west side of Robin Road. Street lighting will be installed under a separate contract with Cobb EMC.
Earney Road	Reconstruction - Old Country Place to Capital City Club property	American Engineers, Inc. (AEI)	In-house construction by Roads & Bridges	Construction and right-of-way plans complete. Right of-way acquisition complete.	Completed	Made some minor plan revisions per constructability review with Roads & Bridges. Plans complete.
Harnes Road	Reconstruction	Atwell Group (LAI)		Project is approximately 90% complete. The items lacking on the plans currently are mostly related to drainage (inlet boxes, pipes, and headwalls). Final right of way lines have not been designed.	0/52	To complete design for this project will take approximately 2 to 3 months.
INTERSECTION IMPROVEMENTS						
East Cherokee Drive at Dean Rusk MS Entrance	Intersection Improvements	Pond & Company	Winter 2016	During the right-of-way acquisition phase commercial property owner requested decel lane be added for future development. Additional design services awarded on 12/1/15. Work to update plans and quantities to incorporate decel lane, provide updated right-of-way plans, and permit the culvert extension are in progress.	3/5	Project will include improvements to East Cherokee Drive between Hickory Road and SR 140 including center left-turn lane and right-turn lanes. Construction will need to be completed by August 1, 2016 !
East Cherokee Dr at Old Hwy 5	Intersection Improvement	American Engineers, Inc. (AEI)	Spring 2016	Right-of-way acquisition is in progress. Plans being revised as a result of right-of-way negotiations. Preparing 2nd submission of utility plans.	10/21	Project will include dual left turn lanes from Old Hwy 5 to East Cherokee Dr east, and also dual left turn lanes from East Cherokee DR to Old Hwy 5 south. Project also includes right turn lane from East Cherokee Dr to Mill Creek Rd. Additional receiving lanes also included on East Cherokee Dr and Old Hwy 5.
East Cherokee Dr at SR 140	Intersection Improvement & Traffic Signal Modification	AMEC, Inc. & Moreland-Altabelli Assoc, Inc. (MAAI)	Fall/Winter 2016	Plans updated to meet current GDOT and EPD ES&PC standards. Plans also updated to accommodate commercial development in SW quadrant. MAAI is working on environmental document - expected to be complete May 2016.	0/19	Have had discussions with GDOT regarding possibility of funding a portion of the construction cost. GDOT has committed to fund \$1,000,000 of construction cost dependent upon approval of environmental document.

Short Title

NORTHWEST CORRIDOR (I-75 AND I-575) MANAGED LANES AT AKERS MILL ROAD TO HICKORY GROVE ROAD ON I-75 AND FROM I-75 TO SIXES ROAD ON I-575

GDOT Project No.

0008256

Federal ID No.

CSNHS-0008-00(256)

Status

Programmed

Service Type

Roadway / Managed Lanes

Sponsor

GDOT

Jurisdiction

Regional - Northwest

Analysis Level

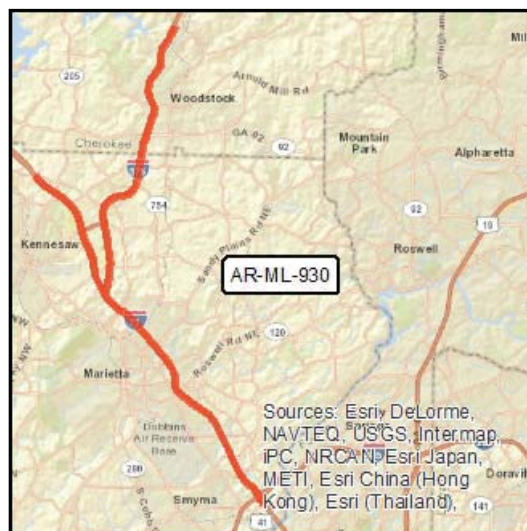
In the Region's Air Quality Conformity Analysis

Existing Thru Lane

0

Planned Thru Lane

1/2



Network Year

2020

Corridor Length

29.7 miles

Detailed Description and Justification

This project will consist of a managed lane system along the I-75 (Akers Mill Road to Hickory Grove Road) and I-575 (I-75 to Sixes Road) corridors in the northwest portion of the Atlanta region. This project will consist of two reversible lanes along the west side of I-75 and transition to the median just north of Bells Ferry Road. It will then reduce to one reversible lane constructed in the median from I-575 to Hickory Grove Road. Access points along I-75 are proposed at I-285, Terrell Mill Road, Roswell Road, I-575, Big Shanty Road, and Hickory Grove Road. At these locations, managed-lane interchanges would be constructed separate from the existing general-purpose interchanges. Along I-575, there will be one reversible managed lane constructed in the median. The managed lane on I-575 would include three pairs of slip ramp accesses between the managed lane and the general-purpose lane systems. In the southbound direction, slip ramp access points are proposed south of Barrett Parkway, south of Shallowford Road and south of Sixes Road. In the northbound direction, the slip-ramp access points are proposed north of Barrett Parkway, north of Shallowford Road and south of Sixes Road.

Phase Status & Funding Information		Status	FISCAL YEAR	TOTAL PHASE COST	BREAKDOWN OF TOTAL PHASE COST BY FUNDING SOURCE			
					FEDERAL	STATE	BONDS	LOCAL/PRIVATE
PE	Interstate Maintenance	AUTH	2006	\$38,500,000	\$34,650,000	\$3,850,000	\$0,000	\$0,000
PE	Interstate Maintenance	AUTH	2007	\$26,852,657	\$24,167,391	\$2,685,266	\$0,000	\$0,000
PE	STP - Urban (>200K) (ARC)	AUTH	2012	\$35,000,000	\$31,500,000	\$3,500,000	\$0,000	\$0,000
ROW	Federal Earmark Funding	AUTH	2013	\$539,940	\$431,952	\$107,988	\$0,000	\$0,000
ROW	Federal Earmark Funding	AUTH	2013	\$1,124,875	\$899,900	\$224,975	\$0,000	\$0,000
ROW	Fuel Funds	AUTH	2013	\$5,000,000	\$0,000	\$5,000,000	\$0,000	\$0,000
ROW	National Highway Performance Program (NHPP)	AUTH	2013	\$19,775,185	\$15,820,148	\$3,955,037	\$0,000	\$0,000
CST	National Highway Performance Program (NHPP)	AUTH	2014	\$25,000,000	\$20,000,000	\$5,000,000	\$0,000	\$0,000
CST	Public Private Partnership	AUTH	2014	\$59,863,386	\$0,000	\$0,000	\$0,000	\$59,863,386
CST	State of Georgia	AUTH	2014	\$300,000,000	\$0,000	\$300,000,000	\$0,000	\$0,000
CST	TIFIA Loan	AUTH	2014	\$275,000,000	\$275,000,000	\$0,000	\$0,000	\$0,000
CST	National Highway Performance Program (NHPP)	AUTH	2015	\$50,000,000	\$40,000,000	\$10,000,000	\$0,000	\$0,000



For additional information about this project, please call (404) 463-3100 or email transportation@atlantaregional.com.



CST	National Highway Performance Program (NHPP)		2016	\$50,000,000	\$40,000,000	\$10,000,000	\$0,000	\$0,000
CST	National Highway Performance Program (NHPP)		2017	\$25,000,000	\$20,000,000	\$5,000,000	\$0,000	\$0,000
CST	National Highway Performance Program (NHPP)		2018	\$25,000,000	\$20,000,000	\$5,000,000	\$0,000	\$0,000
				\$936,656,043	\$522,469,391	\$354,323,266	\$0,000	\$59,863,386

SCP: Scoping PE: Preliminary engineering / engineering / design / planning PE-OV: GDOT oversight services for engineering ROW: Right-of-way Acquisition
 UTL: Utility relocation CST: Construction / Implementation ALL: Total estimated cost, inclusive of all phases

PROJ ID	COUNTY	DESCRIPTION																																																																				
0008256	Cobb	I-75/I-575 MANAGED LANES IN COBB & CHEROKEE																																																																				
Mgmt Let Date:	This project begins on I-75 where the current HOV system ends at Akers Mill Road. It will be two bi-directional lanes, one lane in each direction, from Akers Mill to I-285. At I-285, the project will construct two reversible managed lanes on west side of I-75 between I-285 and I-575, adjacent to the southbound lanes. Near the I-575 interchange the managed lanes will move to the median. One lane will continue north on I-75 to north of Hickory Groove Road. One lane will continue north on I-575 to Sixes Road. System will be barrier separated and access points on I-75 will be provided which will not interfere with general purpose interchange operation. I-575 will have slip ramps to or from GP lanes. The operation of the manage lanes will be tolled to improve effectiveness. Access points on I-75 will be provided at I-285, Terrell Mill, Roswell Road, I-575, Big Shanty and Hickory Grove. The project length is 16.8 miles on I-75, 11.3 miles on I-575 and 1.6 miles on I-285.																																																																					
PROJ NO:	CSNHS-0008-00(256)	SPONSOR: GDOT																																																																				
MPO TIP#:	AR-ML-930	PROJ MGR: Hancock, John																																																																				
MPO:	Atlanta TMA	DOT DIST: 6, 7																																																																				
PROJ LENGTH (MI):	26.86	CONG DIST: 11, 6																																																																				
TYPE WORK:	Managed Lanes	TYPE WORK: Managed Lanes																																																																				
LET RESPONSIBILITY:	Not a Let Project	HOUSE DIST:																																																																				
BIKE PROVISIONS INCLUDED?	N	SENATE DIST:																																																																				
Management Concept Approval Complete 100 VE Study Summary 100 Environmental Summary 100 Field Survey Summary 100 Preliminary Plans Summary 100 0 50 100 % Complete																																																																						
<table><thead><tr><th>Phase</th><th>FY Approved</th><th>Approved FY Estimate *</th><th>Fund</th><th>Phase Status</th></tr></thead><tbody><tr><td>Engineering</td><td>2006</td><td>\$38,500,000.00</td><td>L010</td><td>AUTHORIZED</td></tr><tr><td>Engineering</td><td>2007</td><td>\$26,852,656.88</td><td>L010</td><td>AUTHORIZED</td></tr><tr><td>Engineering</td><td>2012</td><td>\$35,000,000.00</td><td>L230S</td><td>AUTHORIZED</td></tr><tr><td>Engineering</td><td>2013</td><td>\$502,517.31</td><td>60411</td><td>AUTHORIZED</td></tr><tr><td>Right of Way</td><td>2013</td><td>\$5,000,000.00</td><td>60411</td><td>AUTHORIZED</td></tr><tr><td>Right of Way</td><td>2013</td><td>\$539,940.00</td><td>LY10S</td><td>AUTHORIZED</td></tr><tr><td>Right of Way</td><td>2013</td><td>\$1,124,874.95</td><td>LY20S</td><td>AUTHORIZED</td></tr></tbody></table> <table><thead><tr><th>Activity</th><th>Actual Start Date</th><th>Actual Finish Date</th></tr></thead><tbody><tr><td>Management Concept Approval Complete</td><td>9/15/2011</td><td>9/15/2011</td></tr><tr><td>VE Study Summary</td><td>8/14/2009</td><td>6/17/2010</td></tr><tr><td>Environmental Summary</td><td>2/13/2006</td><td></td></tr><tr><td>Field Survey Summary</td><td>1/5/2004</td><td>8/5/2008</td></tr><tr><td>Preliminary Plans Summary</td><td>6/1/2006</td><td>12/31/2009</td></tr></tbody></table><table><tbody><tr><td>Construction</td><td>2018</td><td>\$25,000,000.00</td><td>M001</td><td>PRECST</td></tr><tr><td>SRTA</td><td>2014</td><td>\$3,349,937.00</td><td>M001</td><td>AUTHORIZED</td></tr></tbody></table> * Inflation Included in Estimate			Phase	FY Approved	Approved FY Estimate *	Fund	Phase Status	Engineering	2006	\$38,500,000.00	L010	AUTHORIZED	Engineering	2007	\$26,852,656.88	L010	AUTHORIZED	Engineering	2012	\$35,000,000.00	L230S	AUTHORIZED	Engineering	2013	\$502,517.31	60411	AUTHORIZED	Right of Way	2013	\$5,000,000.00	60411	AUTHORIZED	Right of Way	2013	\$539,940.00	LY10S	AUTHORIZED	Right of Way	2013	\$1,124,874.95	LY20S	AUTHORIZED	Activity	Actual Start Date	Actual Finish Date	Management Concept Approval Complete	9/15/2011	9/15/2011	VE Study Summary	8/14/2009	6/17/2010	Environmental Summary	2/13/2006		Field Survey Summary	1/5/2004	8/5/2008	Preliminary Plans Summary	6/1/2006	12/31/2009	Construction	2018	\$25,000,000.00	M001	PRECST	SRTA	2014	\$3,349,937.00	M001	AUTHORIZED
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DOT

Right of Way Aqcuisition Information:

Preliminary Parcel Count:

Total Parcel Count:

84

Acquired by:

DOT

Right of Way Acquisition Information:

Preliminary Parcel Count:

Total Parcel Count: 84

DOT

Project Description

The Northwest Corridor Express Lanes project will add 29.7 miles of reversible toll lanes along I-75 from Akers Mill Road to Hickory Grove Road and along I-575 from I-75 to Sixes Road. Two new lanes will be built to the west of the existing lanes along I-75 from I-285 to I-575. From that interchange, one new express lane will be added along I-75 north to Hickory Grove Road and one new express lane will be added along I-575 from I-75 to Sixes Road. The lanes will be managed by dynamic priced tolling, allowing drivers to choose to pay a toll to bypass congestion. To maximize benefit for all travelers of the corridor, these express lanes will be reversible.

The project will improve traffic flow, increase options for motorists and individuals using transit and registered vanpools, provide reliable trip times, create jobs and bring economic benefits to the residents of this region.

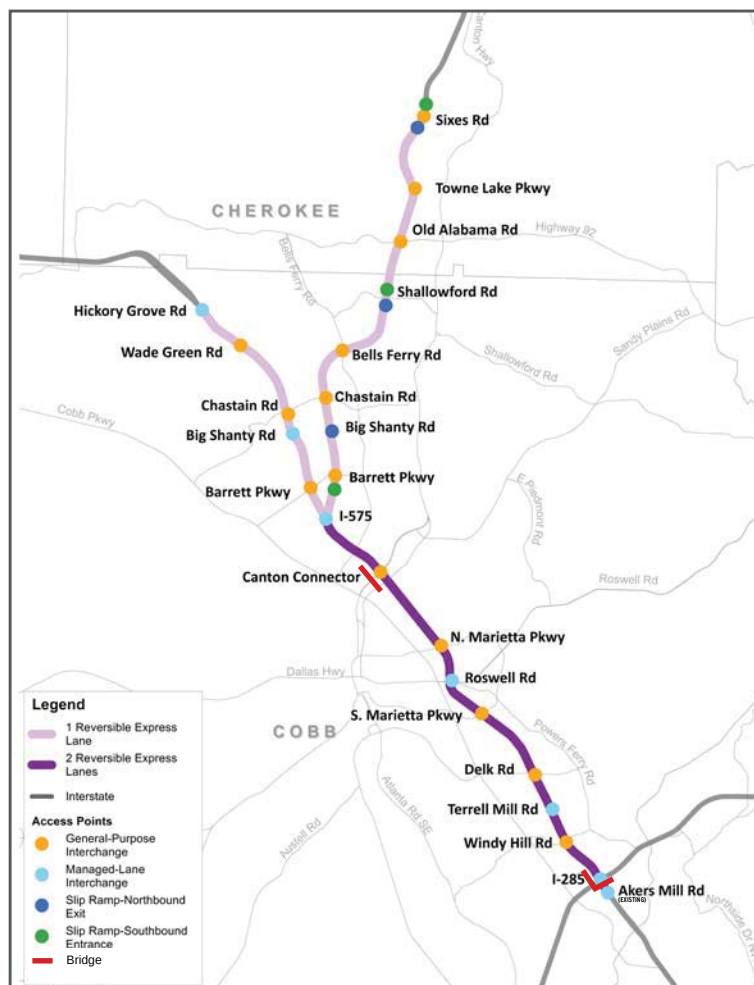
Quick Facts

- Total project cost estimate is \$834 million
- The lanes will operate southbound in the morning and reverse to northbound operation in the evening
- Transit and registered vanpools will travel in the lanes for free
- Delivery method: P3 Design-Build-Finance
- State responsibilities: Overall project management, right of way acquisition, tolling and operations and maintenance

Contact

NWC Express Lanes Project
Georgia Department of Transportation
Northwest Corridor Office
881 Franklin Road, Suite 405
Marietta, GA 30067
678-486-3767
northwestcorridor@dot.ga.gov

Project Area



Current Phase

Design - Construction

Project Schedule*

- | | |
|----------------------|--|
| • June 2013 | Proposals for project received |
| • July 2013 | Northwest Express Roadbuilders selected as best value proposer for project |
| • November 2013 | Project contract executed |
| • November 2013 | TIFIA loan signed |
| • November 2013 | Design/pre-construction activities began |
| • October 2014 | Construction began |
| • Spring/Summer 2018 | Open to traffic |

**Many project elements are dependent upon the review and approvals of state and federal partner agencies and may be subject to change based on their feedback.*

Short Title

CHEROKEE COUNTY COUNTYWIDE SIGNAL TIMING PROJECT

GDOT Project No.

0013135

Federal ID No.

N/A

Status

Programmed

Service Type

Roadway / Operations & Safety

Sponsor

Cherokee County

Jurisdiction

Cherokee County

Analysis Level

Exempt from Air Quality Analysis (40 CFR 93)

Existing Thru Lane

N/A

Planned Thru Lane

N/A



Network Year

2020

Corridor Length

N/A

miles

Detailed Description and Justification

The project involves traffic signal re-timing and traffic signal controller replacement on five (5) corridors in Cherokee County and affects 42 traffic signals. Corridors include: Towne Lake Parkway, Eagle Drive, Bells Ferry Road, Sixes Road and Old Highway 5.

Phase Status & Funding Information		Status	FISCAL YEAR	TOTAL PHASE COST	BREAKDOWN OF TOTAL PHASE COST BY FUNDING SOURCE			
					FEDERAL	STATE	BONDS	LOCAL/PRIVATE
PE	STP - Urban (>200K) (ARC)	AUTH	2015	\$125,000	\$100,000	\$0,000	\$0,000	\$25,000
CST	Congestion Mitigation & Air Quality Improvement (CMAQ)		2016	\$875,000	\$700,000	\$0,000	\$0,000	\$175,000
				\$1,000,000	\$800,000	\$0,000	\$0,000	\$200,000

SCP: Scoping PE: Preliminary engineering / engineering / design / planning PE-OV: GDOT oversight services for engineering ROW: Right-of-way Acquisition
UTL: Utility relocation CST: Construction / Implementation ALL: Total estimated cost, inclusive of all phases

Short Title

ARNOLD MILL ROAD EXTENSION/CONNECTOR - NEW ALIGNMENT FROM MAIN STREET SOUTH OF RIDGEWALK PARKWAY TO ARNOLD MILL ROAD AT NEESE ROAD

GDOT Project No.

N/A

Federal ID No.

N/A

Status

Long Range

Service Type

Roadway / General Purpose Capacity

Sponsor

Cherokee County

Jurisdiction

Cherokee County

Analysis Level

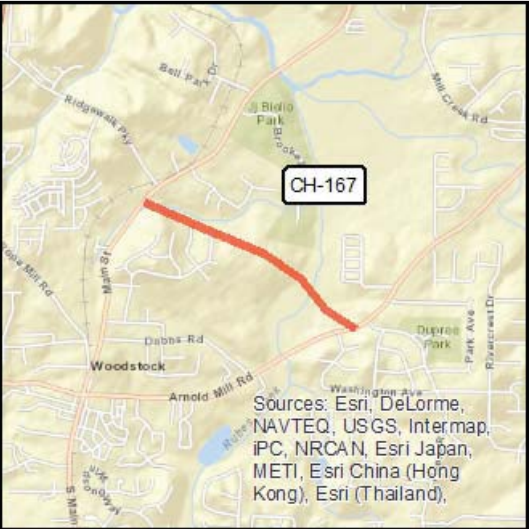
In the Region's Air Quality Conformity Analysis

Existing Thru Lane

0

Planned Thru Lane

2



Network Year

2030

Corridor Length

1.1 miles

Detailed Description and Justification

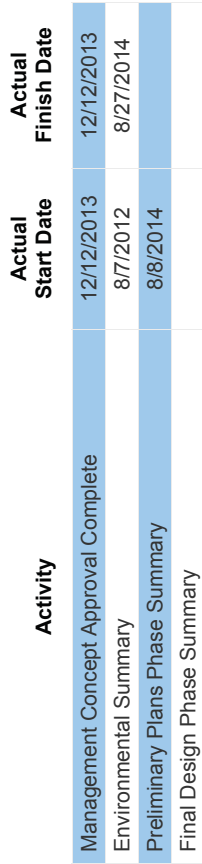
This project involves the construction of a 2-lane roadway on new location from the intersection of Main Street/Hwy 5 at Ridgewalk Parkway to the intersection of Arnold Mill Road at Neese Road. This project will connect traffic from SR 92 to I-575 at the new Ridgewalk Parkway interchange along the existing Neese Road and Ridgewalk Parkway corridors. Project is also referred to as the Arnold Mill Bypass since it creates a northern bypass around downtown Woodstock.

Phase Status & Funding Information		Status	FISCAL YEAR	TOTAL PHASE COST	BREAKDOWN OF TOTAL PHASE COST BY FUNDING SOURCE			
					FEDERAL	STATE	BONDS	LOCAL/PRIVATE
ALL	Local Jurisdiction/Municipality Funds		LR 2020-2030	\$20,000,000	\$0,000	\$0,000	\$0,000	\$20,000,000
				\$20,000,000	\$0,000	\$0,000	\$0,000	\$20,000,000

SCP: Scoping PE: Preliminary engineering / engineering / design / planning PE-OV: GDOT oversight services for engineering ROW: Right-of-way Acquisition
UTL: Utility relocation CST: Construction / Implementation ALL: Total estimated cost, inclusive of all phases

PRECONSTRUCTION STATUS REPORT

SPONSOR:	Woodstock
PROJ MGR:	Kerney, Jeanne
DOT DIST:	6
CONG DIST:	11
TYPE WORK:	TE-Bike/Ped Facility
HOUSE DIST:	
SENATE DIST:	

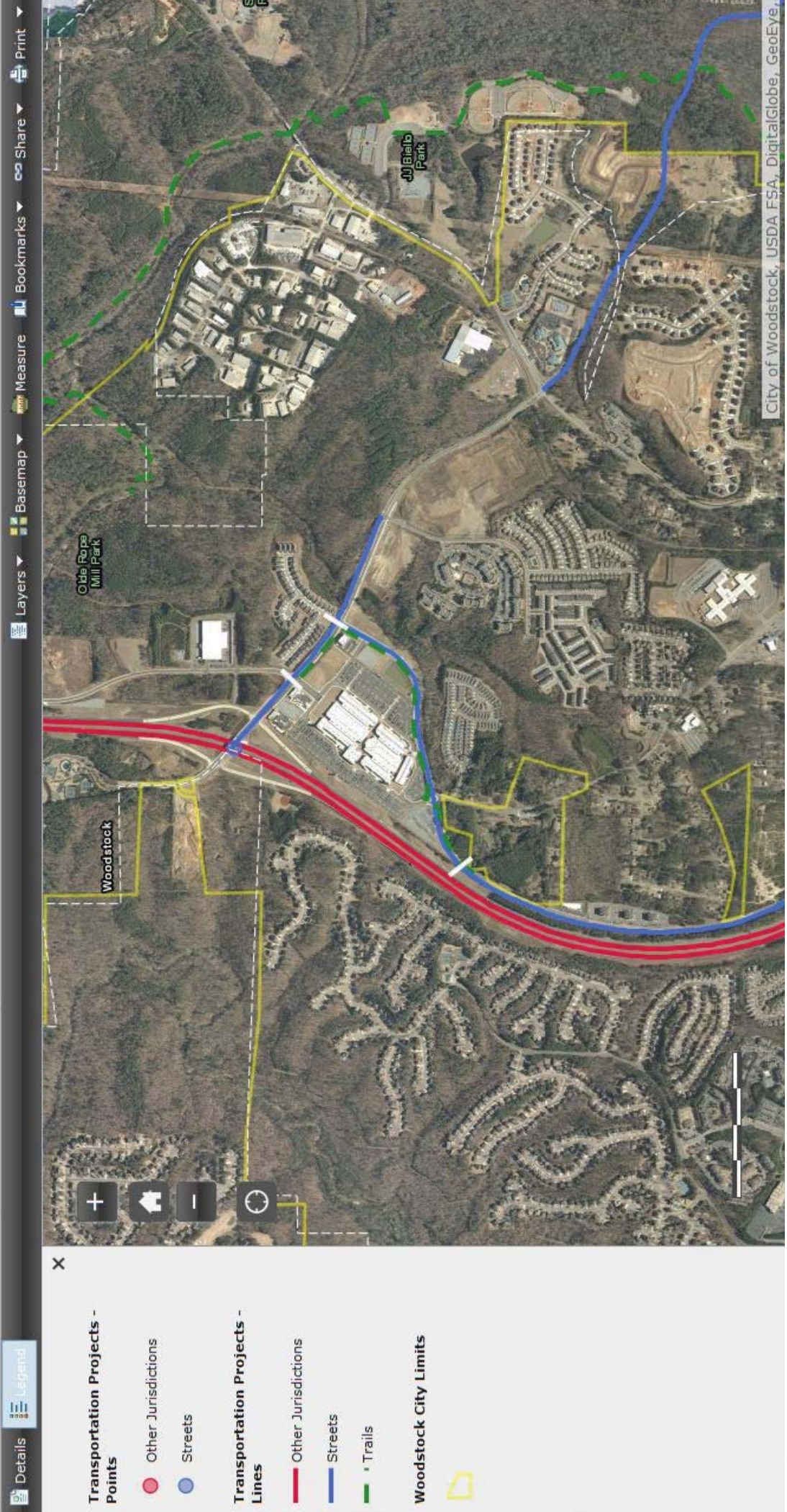


LOC

**PLAN 2040 RTP (March 2014 Update) - Appendix A-3
Unconstrained Aspirations Project List (2041+)**

ASP-CH-002		EAST CHEROKEE DRIVE WIDENING				Jurisdiction		Cherokee County		Existing		Planned		Length (mi.)		Network Year	
		FROM OLD SR 5 (HOLLY SPRINGS PARKWAY) TO SR 140 (HICKORY FLAT HIGHWAY)				Sponsor		TBD		2		4		6.0		TBD	
Dropped						Service Type		General Purpose Roadway Capacity		Analysis		Not modeled					
Status		Year		Fund Type		Federal		State		Local		Bonds		Total			
CST		2031 +		TBD		\$0,000		\$0,000		\$15,800,000		\$0,000		\$15,800,000			
						\$0,000		\$0,000		\$15,800,000		\$0,000		\$15,800,000			
ASP-CH-003		EAST CHEROKEE DRIVE WIDENING				Jurisdiction		Cherokee County		Existing		Planned		Length (mi.)		Network Year	
		FROM SR 140 (HICKORY FLAT HIGHWAY) TO SR 20 (CUMMING HIGHWAY)				Sponsor		TBD		2		4		7.6		TBD	
Dropped						Service Type		General Purpose Roadway Capacity		Analysis		Not modeled					
Status		Year		Fund Type		Federal		State		Local		Bonds		Total			
CST		2031 +		TBD		\$0,000		\$0,000		\$23,000,000		\$0,000		\$23,000,000			
						\$0,000		\$0,000		\$23,000,000		\$0,000		\$23,000,000			
ASP-CH-004		CANTON HIGHWAY WIDENING				Jurisdiction		Cherokee County		Existing		Planned		Length (mi.)		Network Year	
		FROM WOODSTOCK BYPASS TO SR 20				Sponsor		TBD		2		4		8.5		TBD	
Dropped						Service Type		General Purpose Roadway Capacity		Analysis		Not modeled					
Status		Year		Fund Type		Federal		State		Local		Bonds		Total			
CST		2031 +		TBD		\$0,000		\$0,000		\$42,000,000		\$0,000		\$42,000,000			
						\$0,000		\$0,000		\$42,000,000		\$0,000		\$42,000,000			
ASP-CH-010D		BELLS FERRY ROAD: SEGMENT 4				Jurisdiction		Cherokee County		Existing		Planned		Length (mi.)		Network Year	
		FROM SIXES ROAD TO MARIETTA HIGHWAY				Sponsor		TBD		2		4		3.9		TBD	
Dropped						Service Type		General Purpose Roadway Capacity		Analysis		Not modeled					
Status		Year		Fund Type		Federal		State		Local		Bonds		Total			
CST		2031 +		TBD		\$0,000		\$0,000		\$44,000,000		\$0,000		\$44,000,000			
						\$0,000		\$0,000		\$44,000,000		\$0,000		\$44,000,000			

Woodstock Transportation Projects



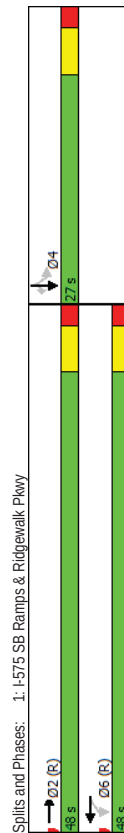
Existing Intersection Analysis

Queues 1: I-575 SB Ramps & Ridgewalk Pkwy

Existing AM
1/20/2016

Lane Group	EBT	WBL	WBT	SBT	SBT
Lane Configurations	159	411	84	3	24
Traffic Volume (vph)	159	411	84	3	24
Future Volume (vph)	159	411	84	3	24
Lane Group Flow (vph)	405	489	117	426	40
Turn Type	NA	Perm	NA	NA	Perm
Protected Phases	2	6	4	4	4
Permitted Phases	2	6	6	4	4
Detector Phase	2	6	6	4	4
Switch Phase	2	6	6	4	4
Minimum Initial (s)	15.0	15.0	15.0	6.0	6.0
Minimum Split (s)	21.3	22.0	22.0	13.0	13.0
Total Split (s)	48.0	48.0	48.0	27.0	27.0
Total Split (%)	64.0%	64.0%	64.0%	36.0%	36.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	C-Max	C-Max	C-Max	None	None
v/c Ratio	0.39	0.96	0.11	0.90	0.09
Control Delay	8.4	45.8	5.0	51.1	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.4	45.8	5.0	51.1	6.2
Queue Length 50th (ft)	73	106	23	188	0
Queue Length 95th (ft)	89	#379	11	98	6
Internal Link Dist (ft)	563	559	412		
Turn Bay Length (ft)	1027	510	1052	489	471
Base Capacity (vph)	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.39	0.96	0.11	0.87	0.08

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 67 (89%), Referenced to phase 2 EBT and 6 WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.



HCM Signalized Intersection Capacity Analysis 1: I-575 SB Ramps & Ridgewalk Pkwy

Existing AM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	0	159	138	411	84	0	0	0	0	355	3	24
Traffic Volume (vph)	0	159	138	411	84	0	0	0	0	355	3	24
Future Volume (vph)	0	159	138	411	84	0	0	0	0	355	3	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1748	1748	1748	1748	1748	1748	1748	1748	1748	1748	1748	1748
Flt Permitted	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1748	1748	1748	1748	1748	1748	1748	1748	1748	1748	1748	1748
Peak-hour factor, PHF	0.92	0.72	0.75	0.84	0.72	0.92	0.92	0.92	0.92	0.85	0.38	0.60
Adj. Flow (vph)	0	221	184	489	117	0	0	0	0	418	8	40
RTOR Reduction (vph)	0	39	0	0	0	0	0	0	0	0	0	29
Lane Group Flow (vph)	0	366	0	489	117	0	0	0	0	0	426	11
Turn Type	NA	NA	Perm	NA	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases	2	2	2	6	6	6	6	6	6	6	6	6
Permitted Phases	2	2	2	6	6	6	6	6	6	6	6	6
Actuated Green, G (s)	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4
Effective Green, g (s)	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4
Actuated g/c Ratio	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	888	888	888	888	888	888	888	888	888	888	888	888
v/s Ratio Prot	0.21	0.21	0.21	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
v/c Ratio	0.37	0.37	0.37	0.96	0.11	0.96	0.11	0.96	0.11	0.96	0.03	0.03
Uniform Delay, d1	9.0	9.0	9.0	15.5	7.6	15.5	7.6	15.5	7.6	15.5	20.3	20.3
Progression Factor	1.00	1.00	1.00	0.68	0.60	0.68	0.60	0.68	0.60	0.68	1.00	1.00
Incremental Delay, d2	1.1	1.1	1.1	30.7	0.2	30.7	0.2	30.7	0.2	30.7	20.0	20.0
Delay (s)	10.0	10.0	10.0	41.2	4.7	41.2	4.7	41.2	4.7	41.2	46.6	46.6
Level of Service	B	B	B	D	A	D	A	D	A	D	D	C
Approach Delay (s)	10.0	10.0	10.0	34.1	0.0	34.1	0.0	34.1	0.0	34.1	44.3	44.3
Approach LOS	B	B	B	C	C	C	C	C	C	C	D	D

Intersection Summary
HCM 2000 Control Delay
HCM 2000 Volume to Capacity ratio
Actuated Cycle Length (s)
Intersection Capacity Utilization
Analysis Period (min)
c Critical Lane Group

Queues
2: I-575 NB Ramps & Ridgewalk Pkwy

Existing AM
1/20/2016

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations	4	4	4	4	4	4
Traffic Volume (vph)	43	468	452	160	0	358
Future Volume (vph)	43	468	452	160	0	358
Lane Group Flow (vph)	60	498	551	195	52	407
Turn Type	Perm	NA	NA	Perm	NA	Free
Protected Phases	2	2	6	6	8	Free
Permitted Phases	2	2	6	6	8	Free
Detector Phase	2	2	6	6	8	Free
Switch Phase	2	2	6	6	8	Free
Minimum Initial (s)	15.0	15.0	6.0	6.0	5.7	
Minimum Split (s)	22.0	22.0	22.0	22.0	12.0	
Total Split (s)	55.0	55.0	55.0	55.0	20.0	
Total Split (%)	73.3%	73.3%	73.3%	73.3%	26.7%	
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	None
v/c Ratio	0.09	0.32	0.19	0.14	0.29	0.26
Control Delay	1.2	1.2	1.6	0.6	34.5	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.2	1.2	1.6	0.6	34.5	0.4
Queue Length 50th (ft)	2	19	11	0	23	0
Queue Length 95th (ft)	m3	m28	28	5	53	0
Internal Link Dist (ft)	559	534			615	
Turn Bay Length (ft)	420		225			
Base Capacity (vph)	689	1544	2933	1345	323	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.32	0.19	0.14	0.16	0.26
Intersection Summary						
Cycle Length: 75						
Actuated Cycle Length: 75						
Offset: 53 (71%), Referenced to phase 2EBTL and 6:WBT, Start of Green						
Natural Cycle: 40						
Control Type: Actuated-Coordinated						
m Volume for 95th percentile queue is metered by upstream signal.						
Splits and Phases: 2: I-575 NB Ramps & Ridgewalk Pkwy						

HCM Signalized Intersection Capacity Analysis
2: I-575 NB Ramps & Ridgewalk Pkwy

Existing AM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4	4	4
Traffic Volume (vph)	43	468	0	0	452	160	41	0	358	0	0	0
Future Volume (vph)	43	468	0	0	452	160	41	0	358	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	4.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	1863			3539	1863	1770	1863				
Flt Permitted	0.45	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	831	1863			3539	1863	1770	1863				
Peak-hour factor, PHF	0.72	0.94	0.92	0.92	0.82	0.82	0.79	0.92	0.88	0.92	0.92	0.92
Adj. Flow (vph)	60	498	0	0	551	195	52	0	407	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	47	0	0	0	0	0	0
Lane Group Flow (vph)	60	498	0	0	551	148	0	52	407	0	0	0
Turn Type	Perm	NA	NA	Perm	Perm	Perm	NA	Free	Free	Free	Free	Free
Protected Phases	2	2			6	6	8					
Permitted Phases	2	2			6	6	8					
Actuated Green, G (s)	57.1	57.1			57.1	57.1	53		75.0			
Effective Green, g (s)	57.1	57.1			57.1	57.1	53		75.0			
Actuated g/C Ratio	0.76	0.76			0.76	0.76	0.07		1.00			
Clearance Time (s)	6.3	6.3			6.3	6.3	6.3		6.3			
Vehicle Extension (s)	5.0	5.0			5.0	5.0	3.0		3.0			
Lane Grp Cap (vph)	632	1418			2694	1205	125		1583			
v/s Ratio Prot	0.07	0.27			0.16							
v/c Ratio	0.09	0.35			0.20	0.12	0.42		0.26			
Uniform Delay, d1	2.3	2.9			2.5	2.4	33.4		0.0			
Progression Factor	0.31	0.25			0.53	0.51	1.00		1.00			
Incremental Delay, d2	0.2	0.5			0.2	0.2	2.2		0.4			
Delay (s)	0.9	1.2			1.5	1.4	35.6		0.4			
Level of Service	A	A			A	A	D		A			
Approach Delay (s)	1.2				1.5							
Approach LOS	A	A			A		A		A			
Intersection Summary												
HCM 2000 Control Delay												
HCM 2000 Volume to Capacity ratio												
Actuated Cycle Length (s)												
Intersection Capacity Utilization												
Analysis Period (min)												
c Critical Lane Group												

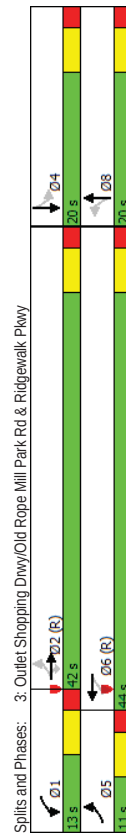
Queues

3. Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

Existing AM
1/20/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Traffic Volume (vph)	69	557	202	58	435	105	5	29	10
Future Volume (vph)	69	557	202	58	435	105	5	29	10
Ideal Flow (vphpl)	96	622	204	72	582	124	76	40	88
Turn Type	pm-pt	NA	Perm	pm-pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	2	1	6	8	8	4	4
Permitted Phases	2	2	2	6	6	8	8	4	4
Detector Phase	5	2	2	1	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Total Split (s)	11.0	42.0	42.0	13.0	44.0	20.0	20.0	20.0	20.0
Total Split (%)	14.7%	56.0%	56.0%	17.3%	58.7%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
All-Red Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.16	0.31	0.21	0.13	0.27	0.63	0.25	0.20	0.29
Control Delay	3.9	6.7	0.8	3.2	6.5	43.3	12.8	29.0	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.9	6.7	0.8	3.2	6.5	43.3	12.8	29.0	12.9
Queue Length 50th (ft)	8	43	0	8	60	54	6	16	8
Queue Length 95th (ft)	16	78	6	11	64	97	0	33	12
Internal Link Dist (ft)	534			686		232		281	
Turn Bay Length (ft)	275	410	268			201			
Base Capacity (vph)	594	2033	949	575	2135	243	355	246	362
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.31	0.21	0.13	0.27	0.51	0.21	0.16	0.24

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 63 (84%), Referenced to phase 2EBTL and 6:WBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated



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Synchro 9 Report
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HCM Signalized Intersection Capacity Analysis

3. Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

Existing AM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Traffic Volume (vph)	69	557	202	58	435	42	105	5	29
Future Volume (vph)	69	557	202	58	435	42	105	5	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	1.00	1.00
Fit	1.00	0.99	0.85	1.00	0.98	1.00	0.88	1.00	0.88
Fit Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1770	3371	1441	1770	3470	1770	1642	1770	1647
Fit Permitted	0.43	1.00	1.00	0.38	1.00	0.70	1.00	0.71	1.00
Satd. Flow (perm)	806	3371	1441	709	3470	1304	1642	1318	1647
Peak-hour factor, PHF	0.72	0.93	0.89	0.81	0.86	0.55	0.85	0.31	0.85
Adj. Flow (vph)	96	599	227	72	506	76	124	16	60
RTOR Reduction (vph)	0	3	91	0	14	0	52	0	59
Lane Group Flow (vph)	96	619	113	72	568	0	124	24	0
Turn Type	pm-pt	NA	Perm	pm-pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	2	1	6	8	8	4	4
Permitted Phases	2	2	2	6	6	8	8	4	4
Actuated Green, G (s)	46.2	41.6	41.6	47.6	42.3	10.1	10.1	10.1	10.1
Effective Green, g (s)	46.2	41.6	41.6	47.6	42.3	10.1	10.1	10.1	10.1
Actuated g/C Ratio	0.62	0.55	0.55	0.63	0.56	0.13	0.13	0.13	0.13
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	555	1869	799	524	1957	175	221	177	221
v/s Ratio Prot	c0.01	c0.18	0.08	0.08	0.16	c0.10	0.01	0.03	0.02
v/s Ratio Perm	0.17	0.33	0.14	0.14	0.29	0.71	0.11	0.23	0.13
Uniform Delay, d1	5.8	9.1	8.1	5.3	8.5	31.0	28.5	29.0	28.6
Progression Factor	0.69	0.61	0.15	0.58	0.68	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.5	0.4	0.1	0.4	12.3	0.2	0.7	0.3
Delay (s)	4.2	6.0	1.6	3.2	6.2	43.4	28.7	29.6	28.9
Level of Service	A	A	A	A	A	D	C	C	C
Approach Delay (s)	4.9	A	A	5.9	A	37.8	D	29.1	C
Approach LOS	A	A	A	A	A	D	D	C	C

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

1/19/2016 Baseline
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Queues
4: Woodstock Pkwy/Meridian Dr & Ridgewalk Pkwy

Existing AM
1/20/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	1	463	185	199	442	78	2	2	5
Traffic Volume (vph)	1	463	185	199	442	78	2	2	5
Future Volume (vph)	1	463	185	199	442	78	2	2	5
Lane Group Flow (vph)	4	498	199	219	490	104	143	0	24
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	6	6	8	8	4	4
Permitted Phases	2	2	2	1	6	8	8	4	4
Detector Phase	2	2	2	1	6	8	8	4	4
Switch Phase	2	2	2	1	6	8	8	4	4
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	6.4	6.4	6.0	6.0
Minimum Split (s)	22.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Total Split (s)	40.0	40.0	40.0	15.0	55.0	20.0	20.0	20.0	20.0
Total Split (%)	53.3%	53.3%	53.3%	20.0%	73.3%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	4.3	4.3	4.3	3.6	4.3	3.6	3.6	3.6	3.6
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.01	0.27	0.22	0.34	0.20	0.53	0.41	0.10	0.10
Control Delay	7.0	6.8	0.9	7.1	6.1	38.7	9.6	18.9	18.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	6.8	0.9	7.1	6.1	38.7	9.6	18.9	18.9
Queue Length 50th (ft)	0	33	0	48	58	45	2	5	5
Queue Length 95th (ft)	1	45	1	m118	121	71	0	15	15
Internal Link Dist (ft)	666	666	555	555	555	531	531	144	144
Turn Bay Length (ft)	110	110	90	187	187	187	187	322	322
Base Capacity (vph)	451	1812	907	666	2468	265	417	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.27	0.22	0.33	0.20	0.39	0.34	0.07	0.07

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 68 (91%), Referenced to phase 2EBTL and 6:WBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.



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Synchro 9 Report
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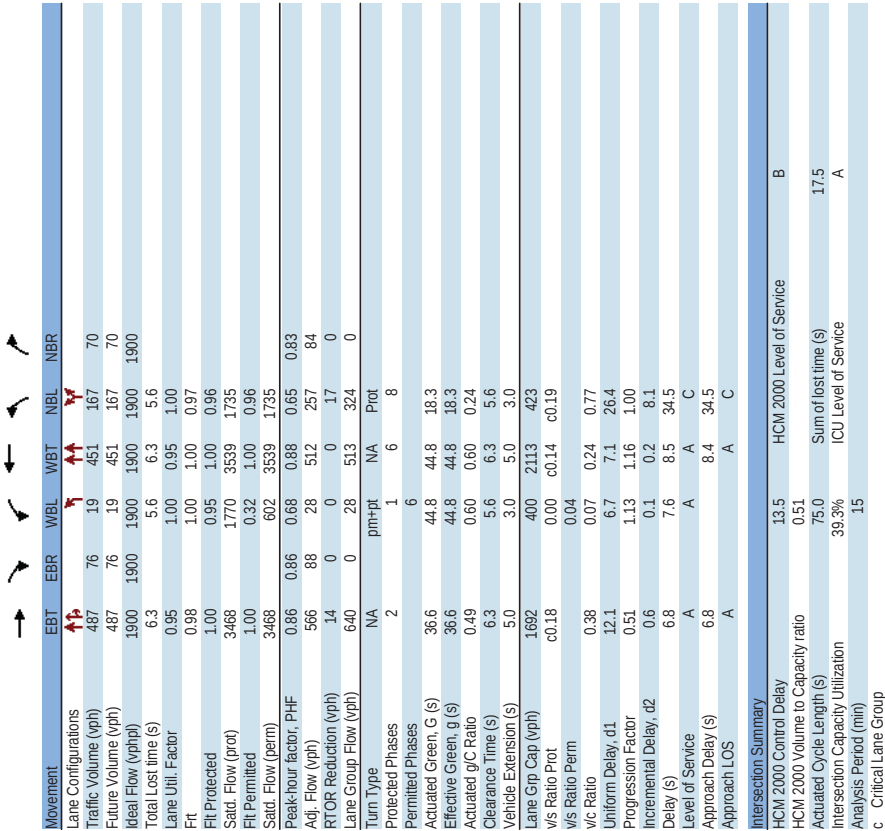
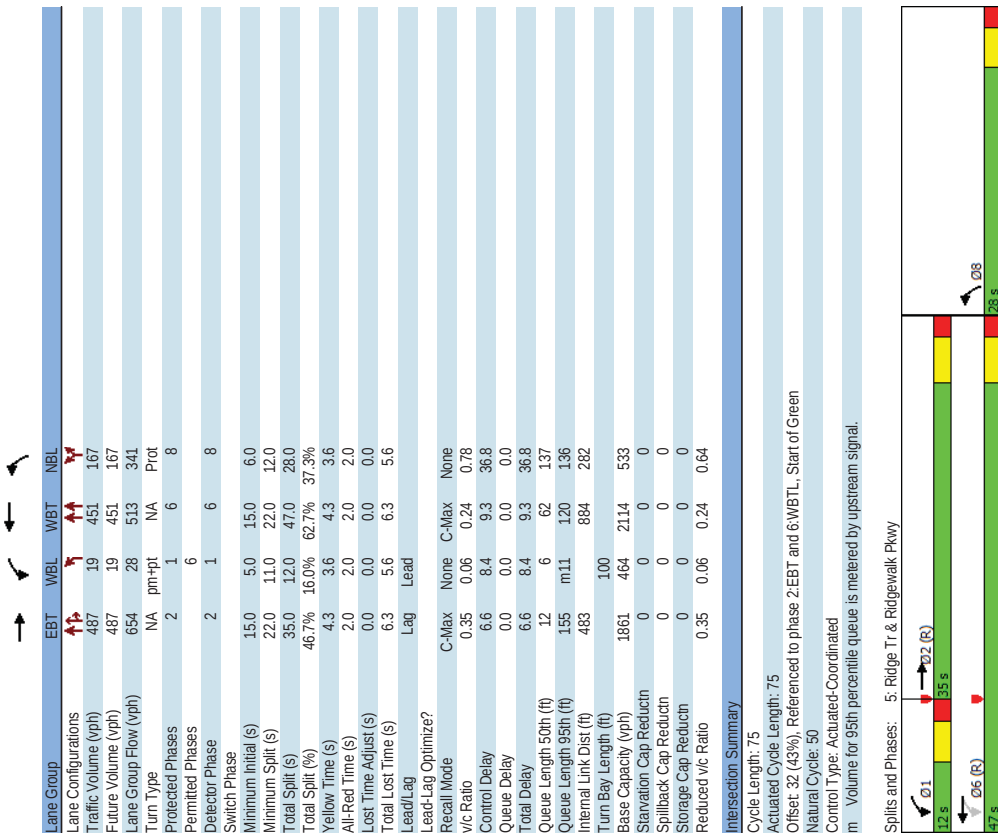
HCM Signalized Intersection Capacity Analysis
4: Woodstock Pkwy/Meridian Dr & Ridgewalk Pkwy

Existing AM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	1	463	185	199	442	78	2	2	5
Traffic Volume (vph)	1	463	185	199	442	78	2	2	5
Future Volume (vph)	1	463	185	199	442	78	2	2	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Flow Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	0.99
Satd. Flow (prot)	1770	3539	1583	1770	3535	1770	1591	1723	1723
Flt Permitted	0.47	1.00	1.00	0.41	1.00	0.74	1.00	0.94	0.94
Satd. Flow (perm)	881	3539	1583	763	3535	1381	1591	1629	1629
Peak-hour factor, PHF	0.25	0.93	0.93	0.91	0.91	0.25	0.50	0.50	0.62
Adj. Flow (vph)	4	498	199	219	486	4	104	4	8
RTOR Reduction (vph)	0	0	97	0	1	0	119	0	10
Lane Group Flow (vph)	4	498	102	219	489	0	104	24	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	6	6	8	8	4	4
Permitted Phases	2	2	2	1	6	8	8	4	4
Actuated Green, G (s)	38.4	38.4	38.4	52.3	52.3	10.8	10.8	10.8	10.8
Effective Green, g (s)	38.4	38.4	38.4	52.3	52.3	10.8	10.8	10.8	10.8
Actuated g/C Ratio	0.51	0.51	0.51	0.70	0.70	0.14	0.14	0.14	0.14
Clearance Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Vehicle Extension (s)	5.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	451	1811	810	643	2465	198	229	234	234
v/s Ratio Plot	0.14	0.14	0.06	c0.04	0.14	c0.08	0.02	0.01	0.01
v/c Ratio	0.01	0.27	0.13	0.34	0.20	0.53	0.10	0.06	0.06
Uniform Delay, d1	9.0	10.4	9.5	4.2	4.0	29.7	27.9	27.7	27.7
Progression Factor	0.63	0.57	0.16	1.36	1.34	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.4	0.3	0.3	0.2	2.5	0.2	0.1	0.1
Delay (s)	5.6	6.3	1.9	6.0	5.5	32.2	28.1	27.8	27.8
Level of Service	A	A	A	A	A	C	C	C	C
Approach Delay (s)	5.0	5.0	5.7	5.7	5.7	29.8	29.8	27.8	27.8
Approach LOS	A	A	A	A	A	C	C	C	C

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

1/19/2016 Baseline
Synchro 9 Report
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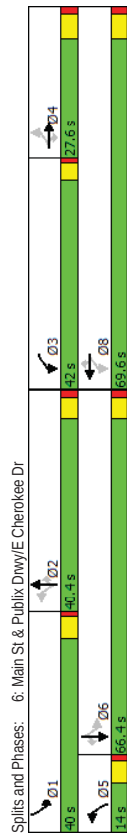


Queues
6: Main St & Publix Drwy/E Cherokee Dr

Existing AM
1/20/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	3	105	17	468	20	274	16	100	285	464	499	7
Traffic Volume (vph)	3	105	17	468	20	274	16	100	285	464	499	7
Future Volume (vph)	3	105	17	468	20	274	16	100	285	464	499	7
Lane Group Flow (vph)	0	156	32	514	36	322	32	152	339	573	640	12
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	4	4	4	3	8	8	5	2	2	2	1	6
Permitted Phases	4	4	4	3	8	8	5	2	2	2	1	6
Detector Phase	4	4	4	3	8	8	5	2	2	2	1	6
Switch Phase	4	4	4	3	8	8	5	2	2	2	1	6
Minimum Initial (s)	8.0	8.0	8.0	4.0	8.0	8.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	27.5	27.5	27.5	11.0	27.5	27.5	14.0	26.0	26.0	14.0	32.0	32.0
Total Split (s)	27.6	27.6	27.6	42.0	69.6	69.6	14.0	40.4	40.4	40.4	66.4	66.4
Total Split (%)	18.4%	18.4%	18.4%	28.0%	46.4%	46.4%	9.3%	26.9%	26.9%	26.7%	44.3%	44.3%
Yellow Time (s)	4.5	4.5	4.5	3.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.0	1.5	1.5	1.0	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	None	None	None	None	None	None	Min	Min	Min	None	Min	Min
Recall Mode	None	None	None	None	None	None	0.14	0.44	0.59	0.87	0.80	0.02
v/c Ratio	0.67	0.10	0.88	0.05	0.38	0.14	0.44	0.59	0.87	0.80	0.02	0.02
Control Delay	70.5	0.7	47.4	24.1	4.0	23.7	51.3	9.2	41.2	43.2	0.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.5	0.7	47.4	24.1	4.0	23.7	51.3	9.2	41.2	43.2	0.0	0.0
Queue Length 50th (ft)	130	0	335	18	0	14	119	0	373	520	0	0
Queue Length 95th (ft)	172	0	552	27	44	19	138	56	455	587	0	0
Internal Link Dist (ft)	33			937			546			494		
Turn Bay Length (ft)	327	381	643	978	984	239	537	697	688	937	839	
Base Capacity (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.08	0.80	0.04	0.33	0.13	0.28	0.49	0.83	0.68	0.01	0.01

Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 125.8												
Natural Cycle: 95												
Control Type: Actuated-Uncoordinated												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												



HCM Signalized Intersection Capacity Analysis
6: Main St & Publix Drwy/E Cherokee Dr

Existing AM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	3	105	17	468	20	274	16	100	285	464	499	7
Traffic Volume (vph)	3	105	17	468	20	274	16	100	285	464	499	7
Future Volume (vph)	3	105	17	468	20	274	16	100	285	464	499	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.5	5.5	5.5	5.0	5.5	5.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fit	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	0.85
Fit Protected	1.00	1.00	0.95	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1858	1583	1770	1863	1863	1863	1770	1863	1583	1770	1863	1583
Fit Permitted	0.99	1.00	0.38	1.00	0.38	1.00	1.00	0.30	1.00	0.47	1.00	1.00
Satd. Flow (perm)	1835	1583	702	1863	1583	1583	565	1863	1583	881	1863	1583
Peak-hour factor, PHF	0.38	0.71	0.53	0.91	0.56	0.85	0.50	0.66	0.84	0.81	0.78	0.58
Adj. Flow (vph)	8	148	32	514	36	322	32	152	339	573	640	12
RTOR Reduction (vph)	0	0	28	0	0	189	0	0	269	0	0	7
Lane Group Flow (vph)	0	156	4	514	36	133	32	152	70	573	640	5
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	4	4	4	3	8	8	5	2	2	2	1	6
Permitted Phases	4	4	4	3	8	8	5	2	2	2	1	6
Actuated Green, G (s)	16.1	16.1	16.1	52.8	52.8	52.8	30.6	26.2	26.2	63.4	54.0	54.0
Effective Green, g (s)	16.1	16.1	16.1	52.8	52.8	52.8	30.6	26.2	26.2	63.4	54.0	54.0
Actuated g/c Ratio	0.13	0.13	0.13	0.41	0.41	0.41	0.24	0.21	0.21	0.50	0.42	0.42
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	231	199	563	770	654	770	382	324	324	661	787	689
v/s Ratio Prot	c0.23	c0.14	c0.23	0.02	0.01	0.08	0.04	0.04	0.04	0.21	0.34	0.00
v/c Ratio	0.09	0.00	0.00	0.05	0.05	0.05	0.18	0.18	0.18	0.21	0.87	0.81
Uniform Delay, d1	53.3	48.9	31.5	22.4	24.0	24.0	37.8	43.9	42.2	24.5	32.4	21.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.6	0.0	19.2	0.0	0.2	0.5	1.4	0.7	11.5	7.3	0.0	0.0
Delay (s)	60.9	48.9	50.7	22.4	24.1	24.1	38.3	45.3	42.9	36.1	39.7	21.3
Level of Service	E	D	D	C	C	C	D	D	D	D	D	C
Approach Delay (s)	58.8			39.7			43.3			37.8		
Approach LOS	E			D			D			D		

Intersection Summary												
HCM 2000 Control Delay												
HCM 2000 Volume to Capacity ratio												
Actuated Cycle Length (s)												
Intersection Capacity Utilization												
Analysis Period (min)												
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis 7: Main St & Rope Mill Rd/E Main St Existing AM 1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	12	2	135	1	0	0	105	180	2	4	481	25
Traffic Volume (veh/h)	12	2	135	1	0	0	105	180	2	4	481	25
Future Volume (Veh/h)	12	2	135	1	0	0	105	180	2	4	481	25
Sign Control	Stop	0%	0%	Stop	0%	0%	Free	0%	0%	Free	0%	0%
Grade	0.38	0.25	0.69	0.25	0.92	0.92	0.42	0.90	0.50	0.33	0.88	0.57
Peak Hour Factor	32	8	196	4	0	0	250	200	4	12	547	44
Hourly flow rate (vph)	32	8	196	4	0	0	250	200	4	12	547	44
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage (veh)												
Upstream signal (ft)												
pX platoon unblocked												
VC, conflicting volume	1295	1297	569	1495	1317	202	591					204
VC1, stage 1 conf vol												
VC2, stage 2 conf vol	1295	1297	569	1495	1317	202	591					204
IC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1					4.1
IC, 2 stage (s)												
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2					2.2
p0 queue free %	71	93	62	92	100	100	75					99
CM capacity (veh/h)	111	120	522	48	116	839	985					1368
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	236	4	454	603								
Volume Left	32	4	250	12								
Volume Right	196	0	4	44								
cSH	323	48	985	1368								
Volume to Capacity	0.73	0.08	0.25	0.01								
Queue Length 95th (ft)	136	7	25	1								
Control Delay (s)	41.1	86.7	6.7	0.3								
Lane LOS	E	F	A	A								
Approach Delay (s)	41.1	86.7	6.7	0.3								
Approach LOS	E	F										
Intersection Summary												
Average Delay												
Intersection Capacity Utilization												
Analysis Period (min)												

HCM Unsignalized Intersection Capacity Analysis 8: Woodstock Pkwy & Outlet Shopping Drwy/Rope Mill Rd Existing AM 1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	24	36	39	63	36	54	60	99	45	57	201	27
Future Volume (veh/h)	24	36	39	63	36	54	60	99	45	57	201	27
Peak Hour Factor	0.67	0.75	0.81	0.66	0.80	0.75	0.62	0.82	0.75	0.79	0.73	0.75
Hourly flow rate (vph)	36	48	48	95	60	72	97	121	60	72	275	36
Approach Volume (veh/h)	132	227						278				383
Crossing Volume (veh/h)	442							156				252
High Capacity (veh/h)	978							1226				1137
High v/c (veh/h)	0.14							0.23				0.34
Low Capacity (veh/h)	794							1017				936
Low v/c (veh/h)	0.17							0.27				0.41
Intersection Summary												
Maximum v/c High												
Maximum v/c Low												
Intersection Capacity Utilization												
ICU Level of Service												

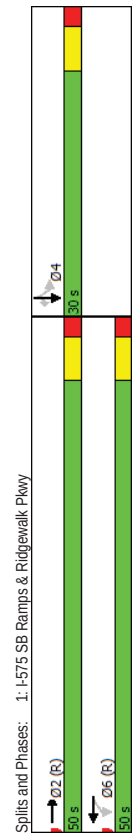
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	389	161	48	152	319	395
Future Volume (vph)	389	161	48	152	319	395
Lane Group Flow (vph)	458	187	52	192	339	465
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4	4	1	6	2	2
Permitted Phases	4	4	1	6	2	2
Detector Phase	4	4	1	6	2	2
Switch Phase	4	4	1	6	2	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	10.0	22.0	22.0	22.0
Total Split (s)	34.0	34.0	14.0	41.0	27.0	27.0
Total Split (%)	45.3%	45.3%	18.7%	54.7%	36.0%	36.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	None	None	None	None
v/c Ratio	0.51	0.21	0.20	0.31	0.81	0.65
Control Delay	8.4	0.7	14.7	17.5	42.0	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.4	0.7	14.7	17.5	42.0	7.1
Queue Length 50th (ft)	102	0	14	57	147	0
Queue Length 95th (ft)	67	m0	31	77	224	51
Internal Link Dist (ft)	1155		596	714		
Turn Bay Length (ft)			177		110	
Base Capacity (vph)	896	893	286	869	521	778
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.21	0.18	0.22	0.65	0.60
Intersection Summary						
Cycle Length: 75						
Actuated Cycle Length: 75						
Offset: 68 (91%), Referenced to phase 4EBL Start of Green						
Natural Cycle: 60						
Control Type: Actuated-Coordinated						
m Volume for 95th percentile queue is metered by upstream signal.						
Splits and Phases: 9. Main St & Ridgewalk Pkwy						

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	389	161	48	152	319	395
Future Volume (vph)	389	161	48	152	319	395
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fit	1.00	0.85	1.00	1.00	1.00	0.85
Fit Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Fit Permitted	0.95	1.00	0.23	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	430	1863	1863	1583
Peak-hour factor, PHF	0.85	0.86	0.92	0.79	0.94	0.85
Adj. Flow (vph)	458	187	52	192	339	465
RTOR Reduction (vph)	0	98	0	0	0	360
Lane Group Flow (vph)	458	89	52	192	339	105
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	35.5	35.5	27.5	27.5	17.0	17.0
Effective Green, g (s)	35.5	35.5	27.5	27.5	17.0	17.0
Actuated g/C Ratio	0.47	0.47	0.37	0.37	0.23	0.23
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	5.0	5.0	5.0
Lane Grp Cap (vph)	837	749	238	683	422	358
v/s Ratio Prot	c0.26		0.01	c0.10	c0.18	
v/c Ratio Perm		0.06	0.07			0.07
v/c Ratio	0.55	0.12	0.22	0.28	0.80	0.29
Uniform Delay, d1	14.0	11.0	16.8	16.8	27.4	24.0
Progression Factor	0.40	0.06	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.3	0.5	0.5	12.0	1.0
Delay (s)	8.0	1.0	17.2	17.2	39.4	25.0
Level of Service	A	A	B	B	D	C
Approach Delay (s)	6.0		17.2	31.1		
Approach LOS	A		B	C		
Intersection Summary						
HCM 2000 Control Delay						
HCM 2000 Volume to Capacity ratio						
Actuated Cycle Length (s)						
Intersection Capacity Utilization						
Analysis Period (min)						
c Critical Lane Group						

Queues
1: I-575 SB Ramps & Ridgewalk Pkwy

Existing PM
1/20/2016

Lane Group	EBT	WBL	WBT	SBT	SBT
Lane Configurations	EB	WB	WB	SB	SB
Traffic Volume (vph)	98	628	222	2	37
Future Volume (vph)	98	628	222	2	37
Lane Group Flow (vph)	215	683	252	259	48
Turn Type	NA	Perm	NA	NA	Perm
Protected Phases	2	6	6	4	4
Permitted Phases	2	6	6	4	4
Detector Phase	2	6	6	4	4
Switch Phase	2	6	6	4	4
Minimum Initial (s)	15.0	15.0	15.0	6.0	6.0
Minimum Split (s)	21.3	22.0	22.0	13.0	13.0
Total Split (s)	50.0	50.0	50.0	30.0	30.0
Total Split (%)	62.5%	62.5%	62.5%	37.5%	37.5%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	C-Max	C-Max	C-Max	None	None
v/c Ratio	0.19	0.93	0.21	0.69	0.13
Control Delay	5.4	32.7	4.0	38.6	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	5.4	32.7	4.0	38.6	8.0
Queue Length 50th (ft)	26	176	30	120	0
Queue Length 95th (ft)	52	#579	45	89	17
Internal Link Dist (ft)	563	559	412		
Turn Bay Length (ft)	1137	734	1177	525	502
Base Capacity (vph)	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.19	0.93	0.21	0.49	0.10



HCM Signalized Intersection Capacity Analysis
1: I-575 SB Ramps & Ridgewalk Pkwy

Existing PM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Traffic Volume (vph)	0	98	63	628	222	0	0	0	0	217	2	37
Future Volume (vph)	0	98	63	628	222	0	0	0	0	217	2	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1760	1770	1863	1760	1863	1760	1770	1863	1760	1770	1863	1760
Flt Permitted	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1760	1760	1863	1760	1863	1760	1760	1863	1760	1760	1863	1760
Peak-hour factor, PHF	0.92	0.77	0.72	0.92	0.88	0.92	0.92	0.92	0.92	0.85	0.50	0.77
Adj. Flow (vph)	0	127	88	883	252	0	0	0	0	255	4	48
RTOR Reduction (vph)	0	25	0	0	0	0	0	0	0	0	0	38
Lane Group Flow (vph)	0	190	0	683	252	0	0	0	0	0	259	10
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases	2	6	6	4	4	4	4	4	4	4	4	4
Permitted Phases	2	6	6	4	4	4	4	4	4	4	4	4
Actuated Green, G (s)	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5
Effective Green, g (s)	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5
Actuated g/c Ratio	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	1111	733	1176	733	1176	733	1176	733	1176	733	1176	733
v/s Ratio Prot	0.11	0.11	0.14	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
v/c Ratio	0.17	0.93	0.21	0.93	0.21	0.93	0.21	0.93	0.21	0.93	0.21	0.93
Uniform Delay, d1	6.1	13.2	6.3	13.2	6.3	13.2	6.3	13.2	6.3	13.2	6.3	13.2
Progression Factor	1.00	0.61	0.49	0.61	0.49	0.61	0.49	0.61	0.49	0.61	0.49	0.61
Incremental Delay, d2	0.3	19.8	0.4	19.8	0.4	19.8	0.4	19.8	0.4	19.8	0.4	19.8
Delay (s)	6.4	27.9	3.5	27.9	3.5	27.9	3.5	27.9	3.5	27.9	3.5	27.9
Level of Service	A	C	A	C	A	C	A	C	A	C	A	C
Approach Delay (s)	6.4	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3
Approach LOS	A	C	C	C	C	C	C	C	C	C	C	C

Intersection Summary		
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.87	
Actuated Cycle Length (s)	80.0	Sum of lost time (s)
Intersection Capacity Utilization	67.4%	ICU Level of Service
Analysis Period (min)	15	
c Critical Lane Group		

Queues
2: I-575 NB Ramps & Ridgewalk Pkwy

Existing PM
1/20/2016

	EBL	EBT	WBT	WBR	NBT	NBR	
Lane Group	EBL	EBT	WBT	WBR	NBT	NBR	
Lane Configurations	33	276	725	383	0	506	
Traffic Volume (vph)	33	276	725	383	0	506	
Future Volume (vph)	33	276	725	383	0	506	
Future Flow (vph)	52	307	755	412	143	527	
Turn Type	Perm	NA	NA	Perm	NA	Free	
Protected Phases	2	2	6	6	8	Free	
Permitted Phases	2	2	6	6	8	Free	
Detector Phase	2	2	6	6	8	Free	
Switch Phase	2	2	6	6	8	Free	
Minimum Initial (s)	15.0	15.0	6.0	6.0	5.7		
Minimum Split (s)	22.0	22.0	22.0	22.0	12.0		
Total Split (s)	52.0	52.0	52.0	52.0	28.0		
Total Split (%)	65.0%	65.0%	65.0%	65.0%	35.0%		
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3		
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Lost Time (s)	6.3	6.3	6.3	6.3	6.3		
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode							
C-Max	0.11	0.24	0.31	0.34	0.55		
v/c Ratio	0.11	0.24	0.31	0.34	0.55		
Control Delay	2.9	3.4	5.3	1.5	39.0	0.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	2.9	3.4	5.3	1.5	39.0	0.6	
Queue Length 50th (ft)	2	12	59	0	67	0	
Queue Length 95th (ft)	6	81	m86	m26	115	0	
Internal Link Dist (ft)	559	534			615		
Turn Bay Length (ft)	420			225			
Base Capacity (vph)	467	1295	2461	1226	480	1583	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.11	0.24	0.31	0.34	0.30	0.33	
Intersection Summary							
Cycle Length: 80							
Actuated Cycle Length: 80							
Offset: 69 (86%), Referenced to phase 2:EBTL and 6:WBT. Start of Green							
Natural Cycle: 40							
Control Type: Actuated-Coordinated							
m Volume for 95th percentile queue is metered by upstream signal.							

Splits and Phases: 2: I-575 NB Ramps & Ridgewalk Pkwy



HCM Signalized Intersection Capacity Analysis
2: I-575 NB Ramps & Ridgewalk Pkwy

Existing PM
1/20/2016

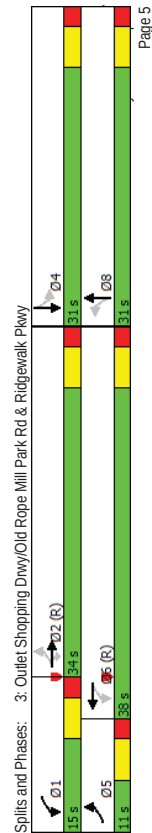
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	33	276	0	0	725	383	119	0	506	0	0	0
Traffic Volume (vph)	33	276	0	0	725	383	119	0	506	0	0	0
Future Volume (vph)	33	276	0	0	725	383	119	0	506	0	0	0
Future Flow (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Total Lost time (s)	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Flt Protected	1770	1863	3539	1583	1770	1583	1770	1583	1770	1583	1770	1583
Satd. Flow (prot)	0.36	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Flt Permitted	673	1863	3539	1583	673	1863	3539	1583	673	1863	3539	1583
Satd. Flow (perm)	0.64	0.90	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Peak-hour factor, PHF	52	307	0	0	755	412	143	0	527	0	0	0
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Reduction (vph)	52	307	0	0	755	286	0	143	527	0	0	0
Lane Group Flow (vph)	Perm	NA	NA	Perm	Perm	Perm	NA	Free	Free	Free	Free	Free
Turn Type	Perm	NA	NA	Perm	Perm	Perm	NA	Free	Free	Free	Free	Free
Protected Phases	2	2	6	6	8	8	8	8	8	8	8	8
Permitted Phases	2	2	6	6	8	8	8	8	8	8	8	8
Actuated Green, G (s)	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6
Effective Green, g (s)	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6	55.6
Actuated g/c Ratio	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	467	1294	2459	1100	2459	1100	261	1583	261	1583	261	1583
v/s Ratio Prot	0.16	0.16	0.21	0.21	0.21	0.21	0.08	0.08	0.08	0.08	0.08	0.08
v/s Ratio Perm	0.11	0.24	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
v/c Ratio	0.11	0.24	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Uniform Delay, d1	4.0	4.5	4.7	4.5	4.7	4.5	31.6	0.0	31.6	0.0	31.6	0.0
Progression Factor	0.48	0.59	0.98	0.98	0.98	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.4	0.2	0.2	0.2	0.2	2.3	0.6	2.3	0.6	2.3	0.6
Delay (s)	2.4	3.1	4.9	4.9	4.9	4.9	34.0	0.6	34.0	0.6	34.0	0.6
Level of Service	A	A	A	A	A	A	C	A	C	A	C	A
Approach Delay (s)	3.0	5.5	5.5	5.5	5.5	5.5	7.7	0.0	7.7	0.0	7.7	0.0
Approach LOS	A	A	A	A	A	A	A	A	A	A	A	A
Intersection Summary												
HCM 2000 Control Delay	5.8	5.8	5.8	5.8	5.8	5.8	12.6	0.0	12.6	0.0	12.6	0.0
HCM 2000 Volume to Capacity ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Actuated Cycle Length (s)	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
Intersection Capacity Utilization	67.4%	67.4%	67.4%	67.4%	67.4%	67.4%	67.4%	67.4%	67.4%	67.4%	67.4%	67.4%
Analysis Period (min)	15	15	15	15	15	15	15	15	15	15	15	15
c Critical Lane Group												

Queues

3. Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

Existing PM
1/20/2016

	↔	→	↘	↙	↔	↘	↙	↔	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	64	525	232	69	703	256	19	52	14
Future Volume (vph)	64	525	232	69	703	256	19	52	14
Lane Group Flow (vph)	68	579	238	92	873	281	144	60	302
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	2	1	6	8	8	4	4
Permitted Phases	2	2	2	6	6	8	8	4	4
Detector Phase	5	2	2	1	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Total Split (s)	11.0	34.0	34.0	15.0	38.0	31.0	31.0	31.0	31.0
Total Split (%)	13.8%	42.5%	42.5%	18.8%	47.5%	38.8%	38.8%	38.8%	38.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjustment (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead-Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	None	C-Max	C-Max	None	C-Max	None	None	None	None
Recall Mode	0.24	0.43	0.33	0.22	0.58	1.05	0.24	0.16	0.46
v/c Ratio	10.1	15.2	2.5	7.0	16.9	100.2	7.4	21.3	8.1
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	10.1	15.2	2.5	7.0	16.9	100.2	7.4	21.3	8.1
Total Delay	12	81	0	22	149	-156	10	21	24
Queue Length 50th (ft)	28	123	16	20	202	#301	26	48	40
Queue Length 95th (ft)	28	123	16	20	202	#301	26	48	40
Internal Link Dist (ft)	534			686		232		281	
Turn Bay Length (ft)	275		410	268			201		
Base Capacity (vph)	285	1343	717	450	1499	267	591	387	662
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.43	0.33	0.20	0.58	1.05	0.24	0.16	0.46
Intersection Summary									
Cycle Length: 80									
Actuated Cycle Length: 80									
Offset: 67 (84%), Referenced to phase 2/EBTL and 6/WBTL, Start of Green									
Natural Cycle: 60									
Control Type: Actuated-Coordinated									
- Volume exceeds capacity queue is theoretically infinite.									
# 95th percentile volume exceeds capacity, queue may be longer.									
Queue shown is maximum after two cycles.									
Queue shown is maximum after two cycles.									



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HCM Signalized Intersection Capacity Analysis

3. Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

Existing PM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SEB
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	64	525	232	69	703	63	256	19	87	52	14	169
Future Volume (vph)	64	525	232	69	703	63	256	19	87	52	14	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	1.00	0.99	0.85	1.00	0.98	1.00	0.88	1.00	0.86	1.00	0.86	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	3367	1441	1770	3478	1770	1638	1770	1602	1770	1602	1770
Flt Permitted	0.24	1.00	1.00	0.33	1.00	0.46	1.00	0.46	1.00	0.67	1.00	0.67
Satd. Flow (perm)	453	3367	1441	621	3478	855	1638	855	1638	1239	1602	1602
Peak-hour factor, PHF	0.94	0.95	0.88	0.75	0.91	0.63	0.91	0.68	0.75	0.87	0.70	0.60
Adj. Flow (vph)	68	553	264	92	773	100	281	28	116	60	20	282
RTOR Reduction (vph)	0	4	147	0	12	0	0	0	80	0	0	162
Lane Group Flow (vph)	68	575	91	92	861	0	281	64	0	60	140	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA	NA
Protected Phases	5	2	2	6	1	6	8	8	4	4	4	4
Permitted Phases	2	2	2	6	6	6	8	8	4	4	4	4
Actuated Green, G (s)	34.6	30.6	30.6	39.4	33.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Effective Green, g (s)	34.6	30.6	30.6	39.4	33.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Actuated G/C Ratio	0.43	0.38	0.38	0.49	0.41	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	261	1287	551	397	1434	267	511	387	500	387	500	387
v/s Ratio Prot	0.01	0.17	0.06	0.10	0.02	0.25	0.04	0.04	0.05	0.09	0.09	0.09
v/s Ratio Perm	0.10	0.45	0.17	0.23	0.60	0.10	0.13	0.13	0.16	0.28	0.28	0.28
v/c Ratio	0.26	0.45	0.17	0.23	0.60	0.10	0.13	0.13	0.16	0.28	0.28	0.28
Uniform Delay, d1	13.8	18.4	16.3	11.2	18.3	27.5	19.7	19.7	19.9	20.7	20.7	20.7
Progression Factor	0.83	0.76	0.45	0.63	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	1.1	0.6	0.3	1.8	69.5	0.1	0.2	0.3	0.3	0.3	0.3
Delay (s)	12.0	15.1	8.0	7.4	17.4	97.0	19.8	20.1	21.0	21.0	21.0	21.0
Level of Service	B	B	A	A	B	F	B	B	C	C	C	C
Approach Delay (s)	12.9	12.9	16.4	16.4	16.4	70.9	20.9	20.9	20.9	20.9	20.9	20.9
Approach LOS	B	B	B	B	B	E	C	C	C	C	C	C
Intersection Summary												
HCM 2000 Control Delay	24.6											
HCM 2000 Volume to Capacity ratio	0.77											
Actuated Cycle Length (s)	80.0											
Intersection Capacity Utilization	71.0%											
Analysis Period (min)	15											
Critical Lane Group												

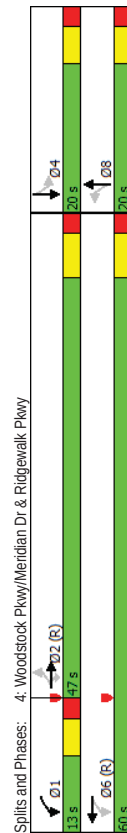
Synchro 9 Report
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Queues
4: Woodstock Pkwy/Meridian Dr & Ridgeway Pkwy

Existing PM
1/20/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	←	←	←	←	←	←	←	←	←
Traffic Volume (vph)	10	620	57	88	719	107	7	1	2
Future Volume (vph)	10	620	57	88	719	107	7	1	2
Ideal Flow (vphpl)	20	646	76	109	848	124	237	0	20
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	1	6	8	8	4	4
Permitted Phases	2	2	2	1	6	8	8	4	4
Detector Phase	2	2	2	1	6	8	8	4	4
Switch Phase	2	2	2	1	6	8	8	4	4
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	6.4	6.4	6.0	6.0
Minimum Split (s)	22.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Minimum Split (%)	47.0	47.0	47.0	13.0	60.0	20.0	20.0	20.0	20.0
Total Split (%)	58.8%	58.8%	58.8%	16.3%	75.0%	25.0%	25.0%	25.0%	25.0%
Yellow Time (s)	4.3	4.3	4.3	3.6	4.3	3.6	3.6	3.6	3.6
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
All-Red Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.06	0.32	0.08	0.20	0.34	0.61	0.56	0.09	0.09
Control Delay	2.5	3.1	0.2	3.5	3.6	44.5	11.1	19.1	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.5	3.1	0.2	3.5	3.6	44.5	11.1	19.1	19.1
Queue Length 50th (ft)	1	15	0	10	48	58	7	3	3
Queue Length 95th (ft)	2	18	0	18	66	104	0	10	10
Internal Link Dist (ft)	666	110	90	555	187	531	144		
Turn Bay Length (ft)	110	110	90	555	187	531	144		
Base Capacity (vph)	358	2043	961	564	2489	249	469	276	276
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.32	0.08	0.19	0.34	0.50	0.51	0.07	0.07

Intersection Summary									
Cycle Length: 80									
Actuated Cycle Length: 80									
Offset: 4 (5%), Referenced to phase 2:EBTL and 6:WBT, Start of Green									
Natural Cycle: 45									
Control Type: Actuated-Coordinated									



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HCM Signalized Intersection Capacity Analysis
4: Woodstock Pkwy/Meridian Dr & Ridgeway Pkwy

Existing PM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	←	←	←	←	←	←	←	←	←
Traffic Volume (vph)	10	620	57	88	719	107	7	179	1
Future Volume (vph)	10	620	57	88	719	107	7	179	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	0.99
Satd. Flow (prot)	1770	3539	1583	1770	3532	1770	1602	1695	1695
Flt Permitted	0.33	1.00	1.00	0.35	1.00	0.74	1.00	0.87	0.87
Satd. Flow (perm)	621	3539	1583	646	3532	1386	1602	1481	1481
Peak-hour factor, PHF	0.50	0.96	0.75	0.81	0.86	0.42	0.86	0.44	0.81
Adj. Flow (vph)	20	646	76	109	836	12	124	16	221
RTOR Reduction (vph)	0	0	33	0	1	0	189	0	0
Lane Group Flow (vph)	20	646	43	109	847	0	124	48	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	1	6	8	8	4	4
Actuated Green, G (s)	45.1	45.1	45.1	56.4	56.4	11.7	11.7	11.7	11.7
Effective Green, g (s)	45.1	45.1	45.1	56.4	56.4	11.7	11.7	11.7	11.7
Actuated g/c Ratio	0.56	0.56	0.56	0.70	0.70	0.15	0.15	0.15	0.15
Clearance Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Vehicle Extension (s)	5.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	350	1995	892	535	2490	202	234	216	216
v/s Ratio Prot	0.18	0.03	0.03	0.13	0.13	0.09	0.03	0.01	0.01
v/c Ratio	0.06	0.32	0.05	0.20	0.34	0.61	0.21	0.05	0.05
Uniform Delay, d1	7.9	9.3	7.8	4.1	4.6	32.0	30.1	29.3	29.3
Progression Factor	0.22	0.27	0.09	0.68	0.65	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.4	0.1	0.2	0.4	5.4	0.4	0.1	0.1
Delay (s)	2.0	2.9	0.8	3.0	3.3	37.5	30.5	29.4	29.4
Level of Service	A	A	A	A	A	D	C	C	C
Approach Delay (s)	2.7	2.7	2.7	3.3	3.3	32.9	32.9	29.4	29.4
Approach LOS	A	A	A	A	A	C	C	C	C
Intersection Summary									
HCM 2000 Control Delay									
HCM 2000 Volume to Capacity ratio									
Actuated Cycle Length (s)									
Intersection Capacity Utilization									
Analysis Period (min)									
c Critical Lane Group									

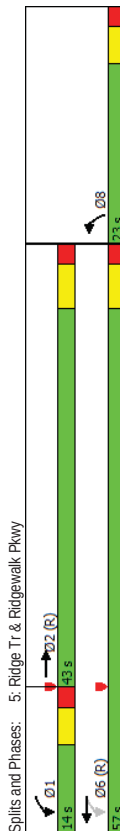
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Queues
5: Ridge Tr & Ridgewalk Pkwy

Existing PM
1/20/2016

Lane Group	EBT	WBL	WBT	NBL
Lane Configurations	↑↑	↑	↑↑	↑
Traffic Volume (vph)	640	74	677	119
Future Volume (vph)	640	74	677	119
Lane Group Flow (vph)	872	84	787	199
Turn Type	NA	pm+pt	NA	Prot
Protected Phases	2	1	6	8
Permitted Phases	6			
Detector Phase	2	1	6	8
Switch Phase				
Minimum Initial (s)	15.0	5.0	15.0	6.0
Minimum Split (s)	22.0	11.0	22.0	12.0
Total Split (s)	43.0	14.0	57.0	23.0
Total Split (%)	53.8%	17.5%	71.3%	28.8%
Yellow Time (s)	4.3	3.6	4.3	3.6
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	5.6	6.3	5.6
Lead/Lag	Lag	Lead		
Lead-Lag Optimize?				
Recall Mode	C-Max	None	C-Max	None
v/c Ratio	0.45	0.19	0.32	0.66
Control Delay	6.4	6.7	8.0	37.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.4	6.7	8.0	37.6
Queue Length 50th (ft)	46	16	100	82
Queue Length 95th (ft)	85	m24	158	128
Internal Link Dist (ft)	483		884	282
Turn Bay Length (ft)	100			
Base Capacity (vph)	1942	458	2431	394
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.45	0.18	0.32	0.51

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 20 (25%), Referenced to phase 2EBT and 6WBTL. Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
m Volume for 95th percentile queue is metered by upstream signal.	



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HCM Signalized Intersection Capacity Analysis
5: Ridge Tr & Ridgewalk Pkwy

Existing PM
1/20/2016

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Volume (vph)	640	142	74	677	119	49
Future Volume (vph)	640	142	74	677	119	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3		5.6	6.3	5.6	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Flt	0.97		1.00	1.00	0.96	
Flt Protected	1.00		0.95	1.00	0.97	
Satd. Flow (prot)	3436		1770	3539	1730	
Flt Permitted	1.00		0.25	1.00	0.97	
Satd. Flow (perm)	3436		461	3539	1730	
Peak-hour factor, PHF	0.91	0.84	0.88	0.86	0.83	0.88
Adj. Flow (vph)	703	169	84	787	143	56
RTOR Reduction (vph)	22	0	0	0	19	0
Lane Group Flow (vph)	850	0	84	787	180	0
Turn Type	NA		pm+pt	NA	Prot	
Protected Phases	2		1	6	8	
Permitted Phases			6			
Actuated Green, G (s)	43.6		55.0	55.0	13.1	
Effective Green, g (s)	43.6		55.0	55.0	13.1	
Actuated g/c Ratio	0.55		0.69	0.69	0.16	
Clearance Time (s)	6.3		5.6	6.3	5.6	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1872		411	2433	283	
v/s Ratio Prot	c0.25		0.01	c0.22	c0.10	
v/s Ratio Perm			0.13			
v/c Ratio	0.45		0.20	0.32	0.64	
Uniform Delay, d1	11.0		5.1	5.0	31.2	
Progression Factor	0.50		1.27	1.40	1.00	
Incremental Delay, d2	0.8		0.2	0.2	4.6	
Delay (s)	6.2		6.7	7.3	35.8	
Level of Service	A		A	A	D	
Approach Delay (s)	6.2		7.2	35.8		
Approach LOS	A		A	D		

Intersection Summary	
HCM 2000 Control Delay	9.7
HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50
Actuated Cycle Length (s)	80.0
Sum of lost time (s)	17.5
Intersection Capacity Utilization	50.6%
Analysis Period (min)	15
c Critical Lane Group	

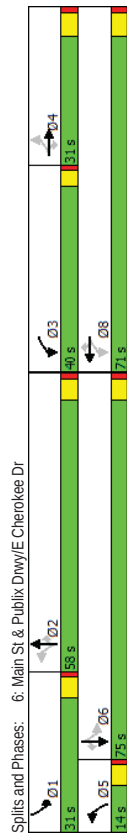
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Queues
6: Main St & Publix Drwy/E Cherokee Dr

Existing PM
1/20/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	37	73	68	352	71	383	98	381	543	296	214	16
Traffic Volume (vph)	37	73	68	352	71	383	98	381	543	296	214	16
Future Volume (vph)	0	156	92	429	108	467	108	423	631	333	233	24
Ideal Flow (vphpl)	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Turn Type	4	4	4	3	8	5	2	2	2	1	6	6
Protected Phases	4	4	4	3	8	5	2	2	2	1	6	6
Permitted Phases	4	4	4	3	8	5	2	2	2	1	6	6
Detector Phase	4	4	4	3	8	5	2	2	2	1	6	6
Switch Phase	4	4	4	3	8	5	2	2	2	1	6	6
Minimum Initial (s)	8.0	8.0	8.0	4.0	8.0	8.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	27.5	27.5	27.5	11.0	27.5	27.5	14.0	26.0	26.0	14.0	32.0	32.0
Total Split (s)	31.0	31.0	31.0	40.0	71.0	71.0	14.0	58.0	58.0	31.0	75.0	75.0
Total Split (%)	19.4%	19.4%	19.4%	25.0%	44.4%	44.4%	8.8%	36.3%	36.3%	19.4%	46.9%	46.9%
Yellow Time (s)	4.5	4.5	4.5	3.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.0	1.5	1.5	1.0	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Recall Mode	None	None	None	None	None	None	None	0.74	0.82	0.33	0.04	0.04
v/c Ratio	0.69	0.28	0.78	0.14	0.51	0.23	0.80	0.74	0.82	0.33	0.04	0.04
Control Delay	71.7	7.8	40.2	26.5	5.0	20.7	54.1	11.8	41.1	29.2	0.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.7	7.8	40.2	26.5	5.0	20.7	54.1	11.8	41.1	29.2	0.1	0.1
Queue Length 50th (ft)	121	0	259	54	5	45	316	43	161	131	0	0
Queue Length 95th (ft)	206	11	404	83	43	91	515	152	#337	224	0	0
Internal Link Dist (ft)	33			937			546			494		
Turn Bay Length (ft)	650			300			100			255		
Base Capacity (vph)	335	435	655	1064	1099	471	859	1032	495	1138	998	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.21	0.65	0.10	0.42	0.23	0.49	0.61	0.67	0.20	0.02	0.02

Intersection Summary												
Cycle Length: 160												
Actuated Cycle Length: 122.8												
Natural Cycle: 85												
Control Type: Actuated-Uncoordinated												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												



HCM Signalized Intersection Capacity Analysis
6: Main St & Publix Drwy/E Cherokee Dr

Existing PM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	37	73	68	352	71	383	98	381	543	296	214	16
Traffic Volume (vph)	37	73	68	352	71	383	98	381	543	296	214	16
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	6.0	6.0	6.0	4.0	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	0.98	0.98	0.98	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Flt Protected	1825	1583	1770	1863	1863	1863	1770	1863	1583	1770	1863	1583
Flt Permitted	0.82	1.00	0.43	1.00	0.43	1.00	0.61	1.00	0.61	1.00	0.18	1.00
Satd. Flow (perm)	1523	1583	805	1863	1863	1583	1143	1863	1583	337	1863	1583
Peak-hour factor, PHF	0.58	0.79	0.74	0.82	0.86	0.82	0.91	0.90	0.86	0.88	0.92	0.87
Adj. Flow (vph)	64	92	92	429	108	467	108	423	631	333	233	24
RTOR Reduction (vph)	0	0	78	0	0	270	0	0	398	0	0	15
Lane Group Flow (vph)	0	156	14	429	108	197	108	423	233	333	233	9
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	4	4	4	3	8	5	2	2	2	1	6	6
Permitted Phases	4	4	4	3	8	5	2	2	2	1	6	6
Actuated Green, G (s)	18.6	18.6	18.6	49.6	49.6	49.6	44.4	35.1	35.1	60.4	46.1	46.1
Effective Green, g (s)	18.6	18.6	18.6	49.6	49.6	49.6	44.4	35.1	35.1	60.4	46.1	46.1
Actuated g/c Ratio	0.15	0.15	0.15	0.41	0.41	0.41	0.37	0.29	0.29	0.50	0.38	0.38
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	233	242	543	760	760	646	465	538	457	406	706	600
v/s Ratio Prot	0.10	0.01	c0.15	0.12	0.12	0.07	0.02	0.23	0.15	c0.27	0.13	0.01
v/c Ratio	0.67	0.06	0.79	0.14	0.31	0.23	0.79	0.51	0.82	0.33	0.02	0.02
Uniform Delay, d1	48.5	44.0	28.5	22.6	24.3	26.1	39.7	36.0	23.2	26.7	23.5	23.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.1	0.1	7.7	0.1	0.3	0.3	8.6	1.9	12.5	0.6	0.0	0.0
Delay (s)	55.7	44.1	36.1	22.7	24.6	26.3	48.3	37.9	35.7	27.3	23.6	23.6
Level of Service	E	D	D	C	C	C	C	D	D	D	C	C
Approach Delay (s)	51.4			29.3			40.6			31.9		
Approach LOS	D			C			D			C		

Intersection Summary												
HCM 2000 Control Delay												
HCM 2000 Volume to Capacity ratio												
Actuated Cycle Length (s)												
Intersection Capacity Utilization												
Analysis Period (min)												
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
7: Main St & Rope Mill Rd/E Main St

Existing PM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	15	0	101	9	4	0	91	399	7	0	362	27
Traffic Volume (veh/h)	15	0	101	9	4	0	91	399	7	0	362	27
Future Volume (Veh/h)	15	0	101	9	4	0	91	399	7	0	362	27
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
Grade	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.62	0.25	0.87	0.75	0.50	0.92	0.95	0.96	0.88	0.33	0.85	0.75
Hourly flow rate (vph)	24	0	116	12	8	0	96	416	8	0	426	36
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage (veh)												
Upstream signal (ft)												
pX platoon unblocked												
VC, conflicting volume	1060	1060	444	1172	1074	420	462					424
VC1, stage 1 conf vol												
VC2, stage 2 conf vol												
VCu, unblocked vol	1060	1060	444	1172	1074	420	462					424
IC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1					4.1
IC, 2 stage (s)												
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2					2.2
p0 queue free %	87	100	81	91	96	100	91					100
CM capacity (veh/h)	183	205	614	128	201	633	1099					1135
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	140	20	520	462								
Volume Left	24	12	96	0								
Volume Right	116	0	8	36								
cSH	437	150	1099	1135								
Volume to Capacity	0.32	0.13	0.09	0.00								
Queue Length 95th (ft)	34	11	7	0								
Control Delay (s)	17.1	32.7	2.4	0.0								
Lane LOS	C	D	A									
Approach Delay (s)	17.1	32.7	2.4	0.0								
Approach LOS	C	D										
Intersection Summary												
Average Delay												3.8
Intersection Capacity Utilization												64.0%
Analysis Period (min)												15
												ICU Level of Service
												C

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HCM Unsignalized Intersection Capacity Analysis
8: Woodstock Pkwy & Outlet Shopping Drwy/Rope Mill Rd

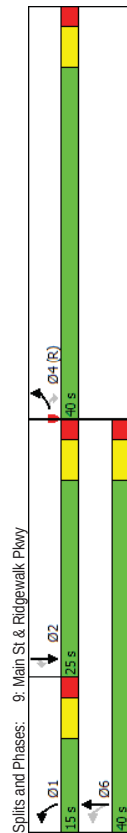
Existing PM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	18	32	77	20	35	54	41	173	19	35	43	10
Future Volume (veh/h)	18	32	77	20	35	54	41	173	19	35	43	10
Peak Hour Factor	0.57	0.91	0.83	0.50	0.89	0.88	0.71	0.73	0.71	0.73	0.70	0.45
Hourly flow rate (vph)	32	35	93	40	39	61	58	237	27	48	61	22
Approach Volume (veh/h)												
Crossing Volume (veh/h)	160	140										131
High Capacity (veh/h)	1233											137
High v/c (veh/h)	0.13											0.11
Low Capacity (veh/h)	1023											1033
Low v/c (veh/h)	0.16											0.13
Intersection Summary												
Maximum v/c High												0.25
Maximum v/c Low												0.31
Intersection Capacity Utilization												29.4%
												ICU Level of Service
												A

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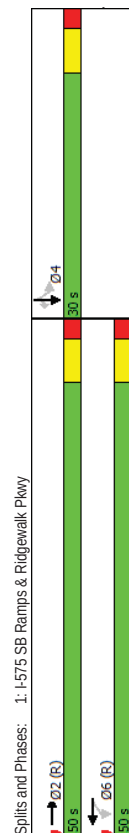
Lane Group	EBL	EBR	NBL	NBT	SBT	EBL	EBR	NBL	NBT	SBT	EBL	EBR	NBL	NBT	SBT
Lane Configurations	EBL	EBR	NBL	NBT	SBT	EBL	EBR	NBL	NBT	SBT	EBL	EBR	NBL	NBT	SBT
Traffic Volume (vph)	536	147	171	369	269	585	536	147	171	369	269	585	536	147	171
Future Volume (vph)	536	147	171	369	269	585	536	147	171	369	269	585	536	147	171
Lane Group Flow (vph)	583	163	180	415	292	722	583	163	180	415	292	722	583	163	180
Turn Type	Prot	Perm	pm-pt	NA	NA	Perm	Prot	Perm	pm-pt	NA	NA	Perm	Prot	Perm	pm-pt
Protected Phases	4	4	6	2	2	2	4	4	6	2	2	2	4	4	6
Detector Phase	4	4	1	6	2	2	4	4	1	6	2	2	4	4	1
Switch Phase	4	4	1	6	2	2	4	4	1	6	2	2	4	4	1
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	10.0	22.0	22.0	22.0	22.0	10.0	22.0	22.0	22.0	22.0	10.0	22.0	22.0
Total Split (%)	40.0	40.0	15.0	40.0	25.0	25.0	40.0	15.0	40.0	25.0	25.0	40.0	15.0	40.0	25.0
Total Split (%)	50.0%	50.0%	18.8%	50.0%	31.3%	31.3%	50.0%	18.8%	50.0%	31.3%	31.3%	50.0%	18.8%	50.0%	31.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?															
Recall Mode	C-Max	C-Max	None	None	None	None	C-Max	C-Max	None	None	None	None	C-Max	C-Max	None
v/c Ratio	0.71	0.20	0.55	0.58	0.77	0.81	0.71	0.20	0.55	0.58	0.77	0.81	0.71	0.20	0.55
Control Delay	11.8	0.6	22.6	22.3	44.0	10.5	11.8	0.6	22.6	22.3	44.0	10.5	11.8	0.6	22.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	0.6	22.6	22.3	44.0	10.5	11.8	0.6	22.6	22.3	44.0	10.5	11.8	0.6	22.6
Queue Length 50th (ft)	97	0	56	151	134	0	97	0	56	151	134	0	97	0	56
Queue Length 95th (ft)	#403	0	98	228	215	42	#403	0	98	228	215	42	#403	0	98
Internal Link Dist (ft)	1155			596	714		1155			596	714		1155		
Turn Bay Length (ft)			177			110			177			110			110
Base Capacity (vph)	818	819	331	791	442	926	818	819	331	791	442	926	818	819	331
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.20	0.54	0.52	0.66	0.78	0.71	0.20	0.54	0.52	0.66	0.78	0.71	0.20	0.54
Intersection Summary															
Cycle Length: 80															
Actuated Cycle Length: 80															
Offset: 62 (78%), Referenced to phase 4EBL Start of Green															
Natural Cycle: 60															
Control Type: Actuated-Coordinated															
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.															



Movement	EBL	EBR	NBL	NBT	SBT	EBL	EBR	NBL	NBT	SBT	EBL	EBR	NBL	NBT	SBT
Lane Configurations	EBL	EBR	NBL	NBT	SBT	EBL	EBR	NBL	NBT	SBT	EBL	EBR	NBL	NBT	SBT
Traffic Volume (vph)	536	147	171	369	269	585	536	147	171	369	269	585	536	147	171
Future Volume (vph)	536	147	171	369	269	585	536	147	171	369	269	585	536	147	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	1.00	0.85	1.00	1.00	1.00	0.85	1.00	0.85	1.00	1.00	1.00	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1863	1770	1583	1770	1863	1863	1863	1770	1583	1770
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00	0.95	1.00	0.95	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	1863	1863	1863	1770	1583	1770	1863	1863	1863	1770	1583	1770
Peak-hour factor, PHF	0.92	0.90	0.95	0.89	0.92	0.81	0.92	0.90	0.95	0.89	0.92	0.81	0.92	0.90	0.95
Adj. Flow (vph)	583	163	180	415	292	722	583	163	180	415	292	722	583	163	180
RTOR Reduction (vph)	0	88	0	0	0	576	0	88	0	0	0	576	0	88	0
Lane Group Flow (vph)	583	75	180	415	292	146	583	75	180	415	292	146	583	75	180
Turn Type	Prot	Perm	pm-pt	NA	NA	Perm	Prot	Perm	pm-pt	NA	NA	Perm	Prot	Perm	pm-pt
Protected Phases	4	4	6	2	2	2	4	4	6	2	2	2	4	4	6
Permitted Phases															
Actuated Green, G (s)	37.0	37.0	31.0	31.0	16.2	16.2	37.0	37.0	31.0	31.0	16.2	16.2	37.0	37.0	31.0
Effective Green, g (s)	37.0	37.0	31.0	31.0	16.2	16.2	37.0	37.0	31.0	31.0	16.2	16.2	37.0	37.0	31.0
Actuated g/c Ratio	0.46	0.46	0.39	0.39	0.20	0.20	0.46	0.46	0.39	0.39	0.20	0.20	0.46	0.46	0.39
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0	5.0	5.0	3.0	3.0	3.0
Lane Grp Cap (vph)	818	732	327	721	377	320	818	732	327	721	377	320	818	732	327
v/s Ratio Prot	c0.33			c0.22	c0.16		c0.33			c0.22	c0.16		c0.33		
v/s Ratio Perm		0.05	0.15			0.09		0.05	0.15			0.09		0.05	0.15
v/c Ratio	0.71	0.10	0.55	0.58	0.77	0.46	0.71	0.10	0.55	0.58	0.77	0.46	0.71	0.10	0.55
Uniform Delay, d1	17.2	12.1	17.8	19.3	30.2	28.0	17.2	12.1	17.8	19.3	30.2	28.0	17.2	12.1	17.8
Progression Factor	0.34	0.05	1.00	1.00	1.00	1.00	0.34	0.05	1.00	1.00	1.00	1.00	0.34	0.05	1.00
Incremental Delay, d2	4.8	0.3	2.0	1.8	11.1	2.2	4.8	0.3	2.0	1.8	11.1	2.2	4.8	0.3	2.0
Delay (s)	10.6	0.8	19.9	21.1	41.3	30.2	10.6	0.8	19.9	21.1	41.3	30.2	10.6	0.8	19.9
Level of Service	B	A	B	C	D	C	B	A	B	C	D	C	B	A	B
Approach Delay (s)	8.5			20.7	33.4		8.5			20.7	33.4		8.5		
Approach LOS	A			C	C		A			C	C		A		
Intersection Summary															
HCM 2000 Control Delay				22.3						22.3					
HCM 2000 Volume to Capacity ratio				0.74						0.74					
Actuated Cycle Length (s)				80.0						80.0					
Sum of lost time (s)															
Intersection Capacity Utilization				68.3%						68.3%					
Analysis Period (min)				15						15					
c Critical Lane Group															

Queues
1: I-575 SB Ramps & Ridgewalk Pkwy

lane Group	EBT	WBL	WBT	SBR
Lane Configurations	1	5	4	4
Traffic Volume (vph)	87	655	137	3
Queue Volume (vph)	87	655	137	3
Lane Group Flow (vph)	260	675	152	376
Turn Type	NA	Perm	NA	Perm
Protected Phases	2	6	6	4
Permitted Phases	2	6	6	4
Detector Phase	2	6	6	4
Switch Phase				
Minimum Initial (s)	150	150	150	60
Minimum Split (s)	21.3	22.0	22.0	13.0
Total Split (s)	50.0	50.0	50.0	30.0
Total Split (%)	62.5%	62.5%	37.5%	37.5%
Yellow Time (s)	4.3	4.3	4.3	4.3
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	6.3
Lead-Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	C-Max	None
C/Ratio	0.25	1.04	0.14	0.82
Control Delay	4.6	65.2	6.4	42.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.6	65.2	6.4	42.8
Queue Length 50th (ft)	24	~376	30	172
Queue Length 95th (ft)	53	#610	49	90
Internal Link Dist (ft)	563		559	412
Turn Bay Length (ft)				
Base Capacity (vph)	1060	651	1086	525
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.25	1.04	0.14	0.72
Intersection Summary				
Cycle Length: 80				
Actuated Cycle Length: 80				
Offset: 60 (75%). Referenced to phase 2:EBT and 6:WBT, Start of Green				
Natural Cycle: 90				
Control Type: Actuated-Coordinated				
- Volume exceeds capacity, queue is theoretically infinite.				
- Queue shown is maximum after two cycles.				
- # 95th percentile volume exceeds capacity, queue may be longer.				
- Queue shown is maximum after two cycles.				



HCM Signalized Intersection Capacity Analysis
1: I-575 SB Ramps & Ridgewalk Pkwy

[illegible]

Baseline

Queues
2: I-575 NB Ramps & Ridgewalk Pkwy

Existing SAT
1/20/2016

	EBL	EBT	WBT	WBR	NBT	NBR	
Lane Group	EBL	EBT	WBT	WBR	NBT	NBR	
Lane Configurations	5	4	4	4	4	4	
Traffic Volume (vph)	25	367	737	251	0	792	
Future Volume (vph)	25	367	737	251	0	792	
Ideal Flow (vphpl)	36	390	810	289	84	880	
Turn Type	Perm	NA	NA	Perm	NA	Free	
Protected Phases	2	2	6	6	8	Free	
Permitted Phases	2	2	6	6	8	Free	
Detector Phase	2	2	6	6	8	Free	
Switch Phase	2	2	6	6	8	Free	
Minimum Initial (s)	15.0	15.0	6.0	6.0	5.7		
Minimum Split (s)	22.0	22.0	22.0	22.0	12.0		
Total Split (%)	57.0	57.0	57.0	57.0	23.0		
Total Split (%)	71.3%	71.3%	71.3%	71.3%	28.8%		
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3		
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	None	
v/c Ratio	0.07	0.27	0.30	0.22	0.42	0.56	
Control Delay	1.0	1.0	3.9	1.6	38.5	1.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	1.0	1.0	3.9	1.6	38.5	1.4	
Queue Length 50th (ft)	1	10	60	9	40	0	
Queue Length 95th (ft)	m2	m17	m86	m24	79	0	
Internal Link Dist (ft)	559	534			615		
Turn Bay Length (ft)	420		225				
Base Capacity (vph)	497	1442	2740	1291	369	1583	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.07	0.27	0.30	0.22	0.23	0.56	
Intersection Summary							
Cycle Length: 80							
Actuated Cycle Length: 80							
Offset: 45 (56%), Referenced to phase 2EBTL and 6:WBT, Start of Green							
Natural Cycle: 40							
Control Type: Actuated-Coordinated							
m Volume for 95th percentile queue is metered by upstream signal.							
Splits and Phases: 2: I-575 NB Ramps & Ridgewalk Pkwy							

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HCM Signalized Intersection Capacity Analysis
2: I-575 NB Ramps & Ridgewalk Pkwy

Existing SAT
1/20/2016

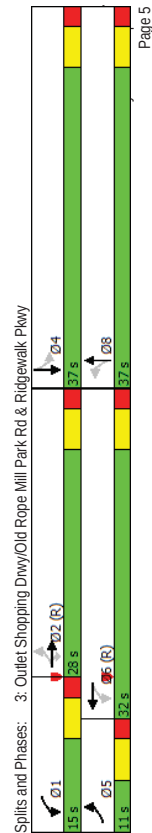
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	5	4	4	4	4	4	4	4	4	4	4	4
Traffic Volume (vph)	25	367	0	0	737	251	73	0	792	0	0	0
Future Volume (vph)	25	367	0	0	737	251	73	0	792	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	1863	1863	1863	1863	1863	1863	1770	1863	1863	1863	1863
Flt Permitted	0.35	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Satd. Flow (perm)	643	1863	1863	1863	1863	1863	1863	1770	1863	1863	1863	1863
Peak-hour factor, PHF	0.69	0.94	0.92	0.92	0.91	0.87	0.87	0.92	0.90	0.92	0.92	0.92
Adj. Flow (vph)	36	390	0	0	810	289	84	0	880	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	36	390	0	0	810	215	0	84	880	0	0	0
Turn Type	Perm	NA	NA	NA	Perm	Perm	Perm	NA	Free	NA	Free	Free
Protected Phases	2	2	2	6	6	6	8	8	8	8	8	8
Permitted Phases	2	2	2	6	6	6	8	8	8	8	8	8
Actuated Green, G (s)	59.4	59.4	59.4	59.4	59.4	59.4	59.4	59.4	80.0	80.0	80.0	80.0
Effective Green, g (s)	59.4	59.4	59.4	59.4	59.4	59.4	59.4	59.4	80.0	80.0	80.0	80.0
Actuated g/c Ratio	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.10	0.10	0.10	0.10
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	477	1383	1383	2627	1175	1175	177	1583	1583	1583	1583	1583
v/s Ratio Prot	0.21	0.21	0.21	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
v/c Ratio	0.08	0.28	0.28	0.31	0.18	0.18	0.47	0.56	0.56	0.56	0.56	0.56
Uniform Delay, d1	2.8	3.4	3.4	3.4	3.1	3.1	34.0	0.0	0.0	0.0	0.0	0.0
Progression Factor	0.20	0.17	0.17	0.97	2.27	2.27	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.4	0.4	0.2	0.2	0.2	2.0	1.4	1.4	1.4	1.4	1.4
Delay (s)	0.8	1.0	1.0	3.5	7.2	7.2	36.0	1.4	1.4	1.4	1.4	1.4
Level of Service	A	A	A	A	A	A	D	A	A	A	A	A
Approach Delay (s)	1.0	4.5	4.5	4.5	4.5	4.5	4.4	4.4	4.4	4.4	4.4	4.4
Approach LOS	A	A	A	A	A	A	A	A	A	A	A	A
Intersection Summary												
HCM 2000 Control Delay												
HCM 2000 Volume to Capacity ratio												
Actuated Cycle Length (s)												
Intersection Capacity Utilization												
Analysis Period (min)												
c Critical Lane Group												

Baseline
Synchro 9 Report
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Queues
3. Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

Existing SAT
1/20/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↰	↰	↰	↰	↰	↰	↰	↰	↰
Traffic Volume (vph)	89	371	702	140	394	474	33	44	15
Future Volume (vph)	89	371	702	140	394	474	33	44	15
Lane Group Flow (vph)	103	833	380	200	498	551	224	60	167
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	2	6	6	8	8	4	4
Permitted Phases	2	2	2	2	1	6	8	4	4
Detector Phase	5	2	2	2	1	6	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Total Split (s)	11.0	28.0	28.0	15.0	32.0	37.0	37.0	37.0	37.0
Total Split (%)	13.8%	35.0%	35.0%	18.8%	40.0%	46.3%	46.3%	46.3%	46.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?									
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None
v/c Ratio	0.29	0.81	0.56	0.70	0.40	1.17	0.30	0.14	0.23
Control Delay	12.9	23.1	4.5	30.9	16.9	124.4	5.9	17.0	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	23.1	4.5	30.9	16.9	124.4	5.9	17.0	5.0
Queue Length 50th (ft)	21	169	8	75	91	~334	15	19	6
Queue Length 95th (ft)	40	173	36	91	120	#488	29	35	27
Internal Link Dist (ft)		534		686		232		281	
Turn Bay Length (ft)	275		410	268		401		232	
Base Capacity (vph)	353	1029	674	289	1238	470	744	432	716
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.81	0.56	0.69	0.40	1.17	0.30	0.14	0.23
Intersection Summary									
Cycle Length: 80									
Actuated Cycle Length: 80									
Offset: 63 (79%), Referenced to phase 2EBTL and 6WBTL, Start of Green									
Natural Cycle: 80									
Control Type: Actuated-Coordinated									
- Volume exceeds capacity, queue is theoretically infinite.									
Queue shown is maximum after two cycles.									
# 95th percentile volume exceeds capacity, queue may be longer.									
Queue shown is maximum after two cycles.									



HCM Signalized Intersection Capacity Analysis
3. Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

Existing SAT
1/20/2016

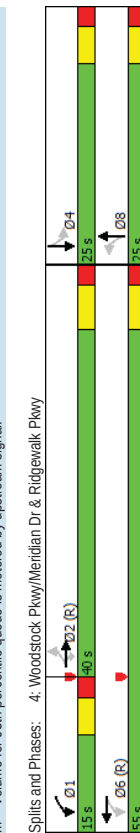
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	371	702	140	394	50	474	33	162	44	15	131
Future Volume (vph)	89	371	702	140	394	50	474	33	162	44	15	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fit	1.00	0.94	0.85	1.00	0.98	1.00	0.88	1.00	0.87	1.00	0.87	1.00
Fit Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1770	3176	1441	1770	3475	1770	1643	1770	1617	1770	1617	1770
Fit Permitted	0.47	1.00	1.00	0.15	1.00	0.65	1.00	0.65	1.00	0.60	1.00	1.00
Satd. Flow (perm)	875	3176	1441	276	3475	1214	1643	1214	1643	1116	1617	1617
Peak-hour factor, PHF	0.86	0.77	0.96	0.70	0.90	0.83	0.86	0.69	0.92	0.73	0.75	0.89
Adj. Flow (vph)	103	482	731	200	438	60	551	48	176	60	20	147
RTOR Reduction (vph)	0	147	275	0	13	0	0	108	0	0	90	0
Lane Group Flow (vph)	103	886	105	200	485	0	551	116	0	60	77	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA	NA
Protected Phases	5	2	2	1	6	8	8	4	4	4	4	4
Permitted Phases	2	2	2	2	6	8	8	8	8	4	4	4
Actuated Green, G (s)	26.2	22.2	22.2	35.8	27.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0
Effective Green, g (s)	26.2	22.2	22.2	35.8	27.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0
Actuated g/C Ratio	0.33	0.28	0.28	0.45	0.34	0.39	0.39	0.39	0.39	0.39	0.39	0.39
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	331	881	399	287	1172	470	636	432	626	432	626	626
v/s Ratio Prot	0.02	c0.22	c0.08	0.14								
v/s Ratio Perm	0.09		0.07	0.23			c0.45		0.05			
v/c Ratio	0.31	0.78	0.26	0.70	0.41		1.17	0.18	0.14	0.12		
Uniform Delay, d1	19.2	26.6	22.5	16.5	20.4		24.5	16.1	15.9	15.8		
Progression Factor	0.83	0.80	0.47	1.14	0.81		1.00	1.00	1.00	1.00		
Incremental Delay, d2	0.5	6.1	1.5	7.1	1.1		98.1	0.1	0.1	0.1		
Delay (s)	16.4	27.4	12.0	25.9	17.6		122.6	16.3	16.0	15.8		
Level of Service	B	C	B	C	B		F	B	B	B		
Approach Delay (s)	22.1			20.0			91.9		15.9			
Approach LOS	C			B			F		B			
Intersection Summary												
HCM 2000 Control Delay	39.1			HCM 2000 Level of Service			D					
HCM 2000 Volume to Capacity ratio	0.97											
Actuated Cycle Length (s)	80.0			Sum of lost time (s)			18.0					
Intersection Capacity Utilization	80.6%			ICU Level of Service			D					
Analysis Period (min)	15											
Critical Lane Group												

Queues
4: Woodstock Pkwy/Meridian Dr & Ridgewalk Pkwy

Existing SAT
1/20/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	11	532	50	135	581	48	2	6	2
Traffic Volume (vph)	11	532	50	135	581	48	2	6	2
Future Volume (vph)	11	532	50	135	581	48	2	6	2
Lane Group Flow (vph)	16	626	68	148	642	56	116	0	20
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	1	6	8	8	4	4
Permitted Phases	2	2	2	2	2	1	6	8	4
Detector Phase	2	2	2	1	6	8	8	4	4
Switch Phase	2	2	2	1	6	8	8	4	4
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	6.4	6.4	6.0	6.0
Minimum Split (s)	22.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Total Split (s)	40.0	40.0	40.0	15.0	55.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%	50.0%	18.8%	68.8%	31.3%	31.3%	31.3%	31.3%
Yellow Time (s)	4.3	4.3	4.3	3.6	4.3	3.6	3.6	3.6	3.6
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.03	0.29	0.07	0.24	0.23	0.36	0.42	0.12	0.12
Control Delay	3.8	4.0	0.1	4.4	2.9	38.8	13.0	24.7	24.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.8	4.0	0.1	4.4	2.9	38.8	13.0	24.7	24.7
Queue Length 50th (ft)	1	30	0	12	31	27	4	6	6
Queue Length 95th (ft)	m2	36	m0	43	60	55	0	12	12
Internal Link Dist (ft)	666	666	666	555	555	531	531	144	144
Turn Bay Length (ft)	110	110	90	90	187	187	187	357	357
Base Capacity (vph)	459	2139	1001	653	2776	336	470	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.29	0.07	0.23	0.23	0.17	0.25	0.06	0.06

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 5 (6%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
m Volume for 95th percentile queue is metered by upstream signal.	



HCM Signalized Intersection Capacity Analysis
4: Woodstock Pkwy/Meridian Dr & Ridgewalk Pkwy

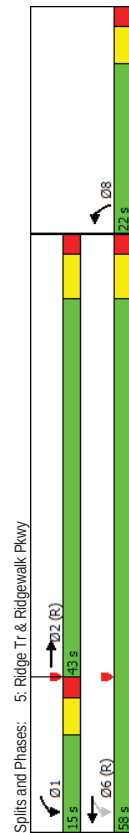
Existing SAT
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	11	532	50	135	581	48	2	6	2	7
Traffic Volume (vph)	11	532	50	135	581	48	2	99	6	2
Future Volume (vph)	11	532	50	135	581	48	2	99	6	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6	5.6
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Flt	1.00	1.00	1.00	0.85	1.00	1.00	0.86	1.00	0.86	0.95
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.98
Satd. Flow (prot)	1770	3539	1583	1770	3536	1770	1603	1770	1603	1728
Flt Permitted	0.41	1.00	1.00	0.36	1.00	0.74	1.00	0.74	1.00	0.82
Satd. Flow (perm)	760	3539	1583	675	3536	1386	1603	1386	1603	1448
Peak-hour factor, PHF	0.69	0.85	0.73	0.91	0.91	0.25	0.86	0.25	0.92	0.75
Adj. Flow (vph)	16	626	68	148	638	4	56	8	108	4
RTOR Reduction (vph)	0	0	28	0	0	0	98	0	0	7
Lane Group Flow (vph)	16	626	40	148	642	0	56	18	0	13
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA	NA
Protected Phases	2	2	2	1	6	8	8	4	4	4
Permitted Phases	2	2	2	2	2	1	6	8	4	4
Actuated Green, G (s)	47.2	47.2	47.2	60.4	60.4	7.7	7.7	7.7	7.7	7.7
Effective Green, g (s)	47.2	47.2	47.2	60.4	60.4	7.7	7.7	7.7	7.7	7.7
Actuated g/c Ratio	0.59	0.59	0.59	0.75	0.75	0.10	0.10	0.10	0.10	0.10
Clearance Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6	5.6
Vehicle Extension (s)	5.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	448	2088	933	613	2669	133	154	133	154	139
v/s Ratio Prot	0.02	0.18	0.03	0.16	0.16	0.04	0.01	0.04	0.01	0.01
v/c Ratio	0.04	0.30	0.04	0.24	0.24	0.42	0.12	0.42	0.12	0.09
Uniform Delay, d1	6.9	8.2	6.9	3.0	2.9	34.1	33.1	34.1	33.1	33.0
Progression Factor	0.41	0.41	0.41	0.00	1.17	0.84	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.3	0.1	0.2	0.2	2.1	0.3	2.1	0.3	0.3
Delay (s)	2.9	3.7	0.1	3.7	2.7	36.2	33.4	36.2	33.4	33.3
Level of Service	A	A	A	A	A	D	C	D	C	C
Approach Delay (s)	3.3	3.3	3.3	2.8	2.8	34.3	33.3	34.3	33.3	33.3
Approach LOS	A	A	A	A	A	C	C	C	C	C

Intersection Summary	
HCM 2000 Control Delay	6.6
HCM 2000 Volume to Capacity ratio	0.32
Actuated Cycle Length (s)	80.0
Intersection Capacity Utilization	50.0%
Analysis Period (min)	15
c Critical Lane Group	

Lane Group	EBT	WBL	WBT	NBL
Lane Configurations	↑↑	↑	↑↑	↑
Traffic Volume (vph)	512	47	588	120
Future Volume (vph)	512	47	588	120
Lane Group Flow (vph)	734	80	688	200
Turn Type	NA	pm+pt	NA	Prot
Protected Phases	2	1	6	8
Permitted Phases	6			
Detector Phase	2	1	6	8
Switch Phase				
Minimum Initial (s)	15.0	5.0	15.0	6.0
Minimum Split (s)	22.0	11.0	22.0	12.0
Total Split (s)	43.0	15.0	58.0	22.0
Total Split (%)	53.8%	18.8%	72.5%	27.5%
Yellow Time (s)	4.3	3.6	4.3	3.6
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Lost Time (s)	6.3	5.6	6.3	5.6
Lead/Lag	Lag	Lead		
Lead-Lag Optimize?				
Recall Mode	C-Max	None	C-Max	None
v/c Ratio	0.38	0.16	0.27	0.67
Control Delay	3.0	5.5	6.4	39.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.0	5.5	6.4	39.3
Queue Length 50th (ft)	13	14	74	85
Queue Length 95th (ft)	30	17	93	125
Internal Link Dist (ft)	483		884	282
Turn Bay Length (ft)	100			
Base Capacity (vph)	1942	534	2433	370
Stationing Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.38	0.15	0.27	0.54

Intersection Summary
 Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 19 (24%), Referenced to phase 2EBT and 6WBTL. Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Volume (vph)	512	132	47	588	120	33
Future Volume (vph)	512	132	47	588	120	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3		5.6	6.3	5.6	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Flt	0.96		1.00	1.00	0.97	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	3407		1770	3539	1736	
Flt Permitted	1.00		0.30	1.00	0.96	
Satd. Flow (perm)	3407		565	3539	1736	
Peak-hour factor, PHF	0.93	0.72	0.59	0.88	0.79	0.69
Adj. Flow (vph)	551	183	80	668	152	48
RTOR Reduction (vph)	34	0	0	0	15	0
Lane Group Flow (vph)	700	0	80	668	185	0
Turn Type	NA		pm+pt	NA	Prot	
Protected Phases	2		1	6	8	
Permitted Phases			6			
Actuated Green, G (s)	43.7		55.0	55.0	13.1	
Effective Green, g (s)	43.7		55.0	55.0	13.1	
Actuated g/C Ratio	0.55		0.69	0.69	0.16	
Clearance Time (s)	6.3		5.6	6.3	5.6	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1861		474	2433	284	
v/s Ratio Prot	c0.21		c0.19	c0.11		
v/c Ratio Perm	0.10		0.10			
v/c Ratio	0.38		0.17	0.27	0.65	
Uniform Delay, d1	10.4		4.7	4.8	31.3	
Progression Factor	0.24		1.07	1.16	1.00	
Incremental Delay, d2	0.6		0.1	0.2	5.3	
Delay (s)	3.1		5.2	5.8	36.6	
Level of Service	A		A	A	D	
Approach Delay (s)	3.1		5.8	36.6		
Approach LOS	A		A	D		

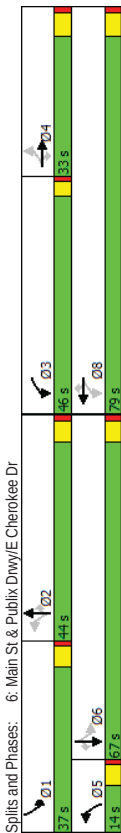
Intersection Summary
 HCM 2000 Control Delay
 HCM 2000 Volume to Capacity ratio
 Actuated Cycle Length (s)
 Intersection Capacity Utilization
 Analysis Period (min)
 Critical Lane Group

Queues
6: Main St & Publix Drwy/E Cherokee Dr

Existing SAT
1/20/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	47	53	53	388	56	244	69	218	308	285	232	11
Traffic Volume (vph)	47	53	53	388	56	244	69	218	308	285	232	11
Future Volume (vph)	47	53	53	388	56	244	69	218	308	285	232	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	4.0	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85
Flt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.98	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1817	1583	1770	1863	1863	1770	1863	1583	1863	1770	1863	1583
Flt Permitted	0.80	1.00	0.52	1.00	0.52	1.00	0.60	1.00	0.60	1.00	0.33	1.00
Satd. Flow (perm)	1488	1583	967	1863	1583	1123	1863	1583	1583	609	1863	1583
Peak-hour factor, PHF	0.73	0.83	0.63	0.92	0.67	0.92	0.91	0.86	0.94	0.88	0.92	0.39
Adj. Flow (vph)	64	64	84	422	84	265	76	253	328	320	252	28
RTOR Reduction (vph)	0	0	71	0	0	152	0	0	256	0	0	18
Lane Group Flow (vph)	0	128	13	422	84	113	76	253	72	320	252	10
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	4	4	4	8	8	8	5	2	2	1	6	6
Permitted Phases	4	4	4	8	8	8	5	2	2	1	6	6
Actuated Green, G (s)	15.6	15.6	15.6	43.0	43.0	43.0	28.8	22.1	22.1	46.4	34.7	34.7
Effective Green, g (s)	15.6	15.6	15.6	43.0	43.0	43.0	28.8	22.1	22.1	46.4	34.7	34.7
Actuated G/C Ratio	0.15	0.15	0.15	0.43	0.43	0.43	0.29	0.22	0.22	0.46	0.34	0.34
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	5.0	5.5	5.0	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	230	244	598	793	674	363	408	346	502	640	544	544
v/s Ratio Prot	0.09	0.01	c0.16	0.05	0.07	0.05	0.01	0.14	0.05	c0.12	0.14	0.01
v/s Ratio	0.56	0.05	0.71	0.11	0.17	0.21	0.62	0.21	0.64	0.39	0.02	0.01
Uniform Delay, d1	39.5	36.4	22.0	17.4	17.9	26.9	35.6	32.2	19.0	25.1	21.8	21.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	0.1	3.8	0.1	0.1	0.3	4.1	0.6	2.7	0.8	0.0	0.0
Delay (s)	42.4	36.4	25.8	17.5	18.0	27.2	39.7	32.9	21.7	26.0	21.9	21.9
Level of Service	D	D	C	B	B	C	D	C	C	C	C	C
Approach Delay (s)	40.0		22.2				34.8			23.5		
Approach LOS	D		C				C			C		

Intersection Summary												
HCM 2000 Control Delay												
HCM 2000 Volume to Capacity ratio												
Actuated Cycle Length: 100.7												
Intersection Capacity Utilization												
Analysis Period (min)												
c Critical Lane Group												



HCM Signalized Intersection Capacity Analysis
6: Main St & Publix Drwy/E Cherokee Dr

Existing SAT
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	47	53	53	388	56	244	69	218	308	285	232	11
Traffic Volume (vph)	47	53	53	388	56	244	69	218	308	285	232	11
Future Volume (vph)	47	53	53	388	56	244	69	218	308	285	232	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	4.0	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85
Flt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.98	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1817	1583	1770	1863	1863	1770	1863	1583	1863	1770	1863	1583
Flt Permitted	0.80	1.00	0.52	1.00	0.52	1.00	0.60	1.00	0.60	1.00	0.33	1.00
Satd. Flow (perm)	1488	1583	967	1863	1583	1123	1863	1583	1583	609	1863	1583
Peak-hour factor, PHF	0.73	0.83	0.63	0.92	0.67	0.92	0.91	0.86	0.94	0.88	0.92	0.39
Adj. Flow (vph)	64	64	84	422	84	265	76	253	328	320	252	28
RTOR Reduction (vph)	0	0	71	0	0	152	0	0	256	0	0	18
Lane Group Flow (vph)	0	128	13	422	84	113	76	253	72	320	252	10
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	4	4	4	8	8	8	5	2	2	1	6	6
Permitted Phases	4	4	4	8	8	8	5	2	2	1	6	6
Actuated Green, G (s)	15.6	15.6	15.6	43.0	43.0	43.0	28.8	22.1	22.1	46.4	34.7	34.7
Effective Green, g (s)	15.6	15.6	15.6	43.0	43.0	43.0	28.8	22.1	22.1	46.4	34.7	34.7
Actuated G/C Ratio	0.15	0.15	0.15	0.43	0.43	0.43	0.29	0.22	0.22	0.46	0.34	0.34
Clearance Time (s)	6.0	6.0	6.0	4.0	6.0	6.0	5.0	5.5	5.0	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	230	244	598	793	674	363	408	346	502	640	544	544
v/s Ratio Prot	0.09	0.01	c0.16	0.05	0.07	0.05	0.01	0.14	0.05	c0.12	0.14	0.01
v/s Ratio	0.56	0.05	0.71	0.11	0.17	0.21	0.62	0.21	0.64	0.39	0.02	0.01
Uniform Delay, d1	39.5	36.4	22.0	17.4	17.9	26.9	35.6	32.2	19.0	25.1	21.8	21.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	0.1	3.8	0.1	0.1	0.3	4.1	0.6	2.7	0.8	0.0	0.0
Delay (s)	42.4	36.4	25.8	17.5	18.0	27.2	39.7	32.9	21.7	26.0	21.9	21.9
Level of Service	D	D	C	B	B	C	D	C	C	C	C	C
Approach Delay (s)	40.0		22.2				34.8			23.5		
Approach LOS	D		C				C			C		

Intersection Summary		
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.73	C
Actuated Cycle Length (s)	100.9	
Intersection Capacity Utilization	70.2%	
Analysis Period (min)	15	
c Critical Lane Group		

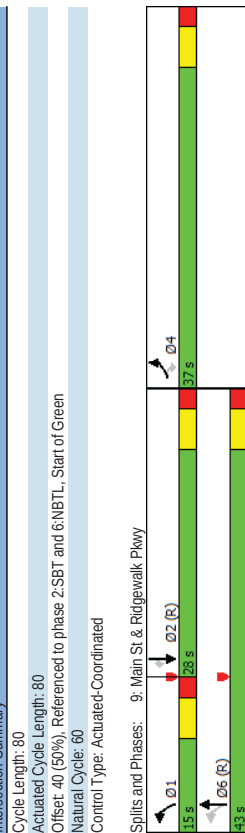
HCM Unsignalized Intersection Capacity Analysis 7: Main St & Rope Mill Rd/E Main St Existing SAT 1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	0	100	17	2	0	73	307	16	1	402	14
Future Volume (Veh/h)	7	0	100	17	2	0	73	307	16	1	402	14
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
Grade	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.58	0.25	0.81	0.47	0.50	0.92	0.55	0.85	0.57	0.25	0.92	0.70
Hourly flow rate (vph)	12	0	123	36	4	0	133	361	28	4	437	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None				None
Median storage (veh)												
Upstream signal (ft)												
pX platoon unblocked												
VC, conflicting volume	1098	1110	447	1219	1106	375	457					389
VC1, stage 1 conf vol												
VC2, stage 2 conf vol												
VCu, unblocked vol	1098	1110	447	1219	1106	375	457					389
IC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1					4.1
IC, 2 stage (s)												
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2					2.2
p0 queue free %	93	100	80	68	98	100	88					100
CM capacity (veh/h)	169	183	612	114	184	671	1104					1170
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	135	40	522	461								
Volume Left	12	36	133	4								
Volume Right	123	0	28	20								
cSH	496	118	1104	1170								
Volume to Capacity	0.27	0.34	0.12	0.00								
Queue Length 95th (ft)	27	34	10	0								
Control Delay (s)	14.9	50.3	3.2	0.1								
Lane LOS	B	F	A	A								
Approach Delay (s)	14.9	50.3	3.2	0.1								
Approach LOS	B	F										
Intersection Summary												
Average Delay												5.0
Intersection Capacity Utilization												60.4%
Analysis Period (min)												15
												ICU Level of Service
												B

HCM Unsignalized Intersection Capacity Analysis 8: Woodstock Pkwy & Outlet Shopping Drwy/Rope Mill Rd Existing SAT 1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	47	44	91	16	28	35	97	70	27	29	30	16
Future Volume (veh/h)	47	44	91	16	28	35	97	70	27	29	30	16
Peak Hour Factor	0.59	0.50	0.81	0.80	0.78	0.73	0.84	0.83	0.68	0.81	0.75	0.57
Hourly flow rate (vph)	80	88	112	20	36	48	115	84	40	36	40	28
Approach Volume (veh/h)												
Crossing Volume (veh/h)	280	280	280	104	104	104	239	204	204	171	171	171
High Capacity (veh/h)												
High Capacity (veh/h)	1285	1285	1285	1113	1113	1113	1180	1180	1180	1211	1211	1211
High v/c (veh/h)	0.22	0.22	0.22	0.09	0.09	0.09	0.20	0.20	0.20	0.09	0.09	0.09
Low Capacity (veh/h)	1070	1070	1070	915	915	915	976	976	976	1004	1004	1004
Low v/c (veh/h)	0.26	0.26	0.26	0.11	0.11	0.11	0.24	0.24	0.24	0.10	0.10	0.10
Intersection Summary												
Maximum v/c High												0.22
Maximum v/c Low												0.26
Intersection Capacity Utilization												37.5%
												ICU Level of Service
												A

Lane Group	EBL	EBR	NBL	NBT	SBT	EBL	EBR	NBL	NBT	SBT	EBL	EBR	NBL	NBT	SBT
Lane Configurations	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Traffic Volume (vph)	430	105	105	222	303	430	105	105	222	303	430	105	105	222	303
Future Volume (vph)	430	105	105	222	303	430	105	105	222	303	430	105	105	222	303
Lane Group Flow (vph)	494	131	119	247	340	494	131	119	247	340	494	131	119	247	340
Turn Type	Prot	Perm	pm-pt	NA	NA	Prot	Perm	pm-pt	NA	NA	Prot	Perm	pm-pt	NA	NA
Protected Phases	4	4	6	2	2	4	4	6	2	2	4	4	6	2	2
Detector Phase	4	4	1	6	2	4	4	1	6	2	4	4	1	6	2
Switch Phase	4	4	1	6	2	4	4	1	6	2	4	4	1	6	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	10.0	22.0	22.0	22.0	22.0	10.0	22.0	22.0	22.0	22.0	10.0	22.0	22.0
Total Split (s)	37.0	37.0	15.0	43.0	28.0	37.0	37.0	15.0	43.0	28.0	37.0	37.0	15.0	43.0	28.0
Total Split (%)	46.3%	46.3%	18.8%	53.8%	35.0%	46.3%	46.3%	18.8%	53.8%	35.0%	46.3%	46.3%	18.8%	53.8%	35.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	None	None	None	C-Max	C-Max	None	None	None	C-Max	C-Max	None	None	None	C-Max	C-Max
Recall Mode	0.84	0.21	0.26	0.26	0.49	0.84	0.21	0.26	0.26	0.49	0.84	0.21	0.26	0.26	0.49
v/c Ratio	27.3	2.0	12.9	12.8	25.4	27.3	2.0	12.9	12.8	25.4	27.3	2.0	12.9	12.8	25.4
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	27.3	2.0	12.9	12.8	25.4	27.3	2.0	12.9	12.8	25.4	27.3	2.0	12.9	12.8	25.4
Total Delay	27.3	2.0	12.9	12.8	25.4	27.3	2.0	12.9	12.8	25.4	27.3	2.0	12.9	12.8	25.4
Queue Length 50th (ft)	225	0	30	66	139	225	0	30	66	139	225	0	30	66	139
Queue Length 95th (ft)	304	0	61	122	236	304	0	61	122	236	304	0	61	122	236
Internal Link Dist (ft)	1155	0	596	714	1155	1155	0	596	714	1155	1155	0	596	714	1155
Turn Bay Length (ft)	685	693	474	963	694	685	693	474	963	694	685	693	474	963	694
Base Capacity (vph)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.19	0.25	0.26	0.49	0.72	0.19	0.25	0.26	0.49	0.72	0.19	0.25	0.26	0.49



Movement	EBL	EBR	NBL	NBT	SBT	EBL	EBR	NBL	NBT	SBT	EBL	EBR	NBL	NBT	SBT
Lane Configurations	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Traffic Volume (vph)	430	105	105	222	303	430	105	105	222	303	430	105	105	222	303
Future Volume (vph)	430	105	105	222	303	430	105	105	222	303	430	105	105	222	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1770	1583	1770	1863	1863	1770	1583	1770	1863	1863
Flt Permitted	0.95	1.00	0.36	1.00	1.00	0.95	1.00	0.36	1.00	1.00	0.95	1.00	0.36	1.00	1.00
Satd. Flow (perm)	1770	1583	679	1863	1863	1770	1583	679	1863	1863	1770	1583	679	1863	1863
Peak-hour factor, PHF	0.87	0.80	0.88	0.90	0.89	0.87	0.80	0.88	0.90	0.89	0.87	0.80	0.88	0.90	0.89
Adj. Flow (vph)	494	131	119	247	340	494	131	119	247	340	494	131	119	247	340
RTOR Reduction (vph)	0	87	0	0	0	0	87	0	0	0	0	87	0	0	0
Lane Group Flow (vph)	494	44	119	247	340	494	44	119	247	340	494	44	119	247	340
Turn Type	Prot	Perm	pm-pt	NA	NA	Prot	Perm	pm-pt	NA	NA	Prot	Perm	pm-pt	NA	NA
Protected Phases	4	4	6	2	2	4	4	6	2	2	4	4	6	2	2
Permitted Phases	4	4	6	2	2	4	4	6	2	2	4	4	6	2	2
Actuated Green, G (s)	26.6	26.6	41.4	41.4	28.7	26.6	26.6	41.4	41.4	28.7	26.6	26.6	41.4	41.4	28.7
Effective Green, g (s)	26.6	26.6	41.4	41.4	28.7	26.6	26.6	41.4	41.4	28.7	26.6	26.6	41.4	41.4	28.7
Actuated g/C Ratio	0.33	0.33	0.52	0.52	0.36	0.33	0.33	0.52	0.52	0.36	0.33	0.33	0.52	0.52	0.36
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	5.0	3.0	3.0	3.0	3.0	5.0	3.0	3.0	3.0	3.0	5.0
Lane Grp Cap (vph)	588	526	442	964	668	588	526	442	964	668	588	526	442	964	668
v/s Ratio Prot	c0.28	c0.13	c0.13	c0.13	c0.18	c0.28	c0.13	c0.13	c0.13	c0.18	c0.28	c0.13	c0.13	c0.13	c0.18
v/c Ratio	0.84	0.08	0.27	0.26	0.51	0.84	0.08	0.27	0.26	0.51	0.84	0.08	0.27	0.26	0.51
Uniform Delay, d1	24.7	18.3	11.0	10.7	20.1	24.7	18.3	11.0	10.7	20.1	24.7	18.3	11.0	10.7	20.1
Progression Factor	0.99	0.36	1.00	1.00	1.00	0.99	0.36	1.00	1.00	1.00	0.99	0.36	1.00	1.00	1.00
Incremental Delay, d2	9.9	0.1	0.3	0.6	2.8	9.9	0.1	0.3	0.6	2.8	9.9	0.1	0.3	0.6	2.8
Delay (s)	24.6	6.7	11.3	11.4	22.9	24.6	6.7	11.3	11.4	22.9	24.6	6.7	11.3	11.4	22.9
Level of Service	C	A	B	B	C	C	A	B	B	C	C	A	B	B	C
Approach Delay (s)	20.9	11.4	11.4	21.7	21.7	20.9	11.4	11.4	21.7	21.7	20.9	11.4	11.4	21.7	21.7
Approach LOS	C	B	B	C	C	C	B	B	C	C	C	B	B	C	C

Intersection Summary															
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service													
HCM 2000 Volume to Capacity ratio	0.64														
Actuated Cycle Length (s)	80.0	Sum of lost time (s)													
Intersection Capacity Utilization	60.6%	ICU Level of Service													
Analysis Period (min)	15														
c Critical Lane Group															

GDOT Right Turn Lane Analysis

RIGHT TURN LANE ANALYSIS per GDOT standards

The following right turn lane analyses were used to determine the need for dedicated turn bays at the proposed site driveway locations that are located on State Routes.

GDOT standards require the installation of a deceleration lane on state routes at no cost to the department when traffic entering the development meets or exceeds the values shown in the following table.

GDOT REQUIREMENTS FOR DECELERATION LANES					
Site Driveway	Right Turn Traffic (% Total Entering)	Right Turn Volume (veh/day)	Roadway Speed / # Lanes	GDOT Threshold (veh/day)	Requirement
SR 1 @ Site Drwy 1	5.2% North Tract	606	35 mph / 4-Lane	100	100' storage 50' taper
SR 1 @ Site Drwy 2	11.4% North Tract	1329	35 mph / 4-Lane	100	100' storage 50' taper
SR 1 @ Site Drwy 3	10.4% North Tract	1213	35 mph / 4-Lane	100	100' storage 50' taper
SR 1 @ Site Drwy 4	39.4% South Tract	1602	25 mph / 2-Lane	200	50' taper
SR 1 @ Site Drwy 5	58.6% South Tract	2382	35 mph / 4-Lane	100	100' storage 50' taper

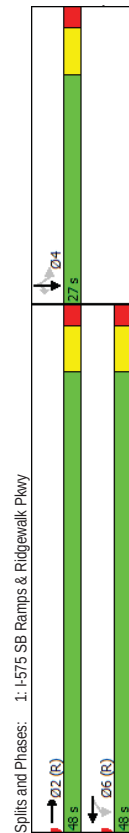
Findings

Based on the number of projected daily right turns Site Driveway 1, Site Driveway 2, and Site Driveway 3, and Site Driveway 5 will meet the GDOT requirements for construction of deceleration lane. Site Driveway 4 will meet the GDOT requirements for construction of a taper.

Future “No-Build” Intersection Analysis

Queues 1: I-575 SB Ramps & Ridgewalk Pkwy No-Build AM 1/20/2016

Lane Group	EBT	WBL	WBT	SBT	SBT
Lane Configurations	176	454	93	3	26
Traffic Volume (vph)	176	454	93	3	26
Future Volume (vph)	176	454	93	3	26
Lane Group Flow (vph)	447	540	129	469	43
Turn Type	NA	Perm	NA	NA	Perm
Protected Phases	2	6	6	4	4
Permitted Phases	2	6	6	4	4
Detector Phase	2	6	6	4	4
Switch Phase	2	6	6	4	4
Minimum Initial (s)	15.0	15.0	15.0	6.0	6.0
Minimum Split (s)	21.3	22.0	22.0	13.0	13.0
Total Split (s)	48.0	48.0	48.0	27.0	27.0
Total Split (%)	64.0%	64.0%	64.0%	36.0%	36.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	C-Max	C-Max	C-Max	None	None
v/c Ratio	0.44	1.17	0.12	0.96	0.09
Control Delay	9.3	113.6	5.2	61.2	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.3	113.6	5.2	61.2	6.7
Queue Length 50th (ft)	86	~314	25	214	0
Queue Length 95th (ft)	102	#455	17	108	8
Internal Link Dist (ft)	563	559	412		
Turn Bay Length (ft)					
Base Capacity (vph)	1012	463	1035	489	471
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.44	1.17	0.12	0.96	0.09
Intersection Summary					
Cycle Length: 75					
Actuated Cycle Length: 75					
Offset: 67 (89%), Referenced to phase 2 EBT and 6 WBT, Start of Green					
Natural Cycle: 120					
Control Type: Actuated-Coordinated					
Volume exceeds capacity, queue is theoretically infinite.					
Queue shown is maximum after two cycles.					
# 95th percentile volume exceeds capacity, queue may be longer.					
Queue shown is maximum after two cycles.					



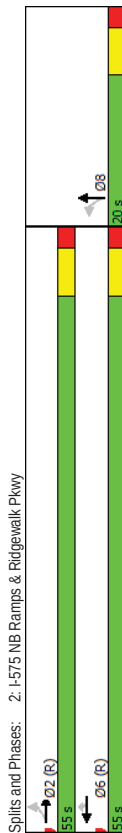
HCM Signalized Intersection Capacity Analysis 1: I-575 SB Ramps & Ridgewalk Pkwy No-Build AM 1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		176	152	454	93	0	0	0	0	392	3	26
Traffic Volume (vph)	0	176	152	454	93	0	0	0	0	392	3	26
Future Volume (vph)	0	176	152	454	93	0	0	0	0	392	3	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1749	1770	1863	1770	1863	1770	1863	1770	1863	1770	1863	1770
Flt Permitted	1.00	0.45	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1749	833	1863	833	1863	1749	833	1863	833	1863	1749	833
Peak-hour factor, PHF	0.92	0.72	0.75	0.84	0.72	0.92	0.92	0.92	0.92	0.85	0.38	0.60
Adj. Flow (vph)	0	244	203	540	129	0	0	0	0	461	8	43
RTOR Reduction (vph)	0	40	0	0	0	0	0	0	0	0	0	31
Lane Group Flow (vph)	0	407	0	540	129	0	0	0	0	0	0	469
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases	2	6	6	4	4	4	4	4	4	4	4	4
Permitted Phases	2	6	6	4	4	4	4	4	4	4	4	4
Actuated Green, G (s)	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7
Effective Green, g (s)	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7
Actuated g/c Ratio	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	972	463	1035	463	1035	972	463	1035	463	1035	972	463
v/s Ratio Prot	0.23	0.65	0.07	0.65	0.07	0.23	0.65	0.07	0.65	0.07	0.23	0.65
v/c Ratio	0.42	1.17	0.12	1.17	0.12	0.42	1.17	0.12	1.17	0.12	0.42	1.17
Uniform Delay, d1	9.6	16.6	7.9	16.6	7.9	9.6	16.6	7.9	16.6	7.9	9.6	16.6
Progression Factor	1.00	0.70	0.61	0.70	0.61	1.00	0.70	0.61	0.70	0.61	1.00	0.70
Incremental Delay, d2	1.3	95.9	0.2	95.9	0.2	1.3	95.9	0.2	95.9	0.2	1.3	95.9
Delay (s)	11.0	107.6	5.1	107.6	5.1	11.0	107.6	5.1	107.6	5.1	11.0	107.6
Level of Service	B	F	A	F	A	B	F	A	F	A	B	F
Approach Delay (s)	11.0	87.8	0.0	87.8	0.0	11.0	87.8	0.0	87.8	0.0	11.0	87.8
Approach LOS	B	F	A	F	A	B	F	A	F	A	B	F
Intersection Summary												
HCM 2000 Control Delay	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0
HCM 2000 Volume to Capacity ratio	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Actuated Cycle Length (s)	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0
Intersection Capacity Utilization	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%
Analysis Period (min)	15	15	15	15	15	15	15	15	15	15	15	15
c Critical Lane Group												

Queues
2: I-575 NB Ramps & Ridgewalk Pkwy

No-Build AM
1/20/2016

	EBL	EBT	WBT	WBR	NBT	NBR	
Lane Group	EBL	EBT	WBT	WBR	NBT	NBR	
Lane Configurations	47	517	499	177	0	395	
Traffic Volume (vph)	47	517	499	177	0	395	
Future Volume (vph)	47	517	499	177	0	395	
Lane Group Flow (vph)	65	550	609	216	57	449	
Turn Type	Perm	NA	NA	Perm	NA	Free	
Protected Phases	2	2	6	6	8	Free	
Permitted Phases	2	2	6	6	8	Free	
Detector Phase	2	2	6	6	8	Free	
Switch Phase	2	2	6	6	8	Free	
Minimum Initial (s)	15.0	15.0	6.0	6.0	5.7		
Minimum Split (s)	22.0	22.0	22.0	22.0	12.0		
Total Split (s)	55.0	55.0	55.0	55.0	20.0		
Total Split (%)	73.3%	73.3%	73.3%	73.3%	26.7%		
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3		
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	None	
v/c Ratio	0.10	0.36	0.21	0.16	0.30	0.28	
Control Delay	1.2	1.3	1.5	0.5	34.6	0.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	1.2	1.3	1.5	0.5	34.6	0.5	
Queue Length 50th (ft)	2	21	13	0	25	0	
Queue Length 95th (ft)	m4	m29	26	3	56	0	
Internal Link Dist (ft)	559	534			615		
Turn Bay Length (ft)	420		225				
Base Capacity (vph)	648	1540	2925	1346	323	1583	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.10	0.36	0.21	0.16	0.18	0.28	
Intersection Summary							
Cycle Length: 75							
Actuated Cycle Length: 75							
Offset: 52 (69%), Referenced to phase 2EBTL and 6:WBT, Start of Green							
Natural Cycle: 40							
Control Type: Actuated-Coordinated							
m Volume for 95th percentile queue is metered by upstream signal.							



HCM Signalized Intersection Capacity Analysis
2: I-575 NB Ramps & Ridgewalk Pkwy

No-Build AM
1/20/2016

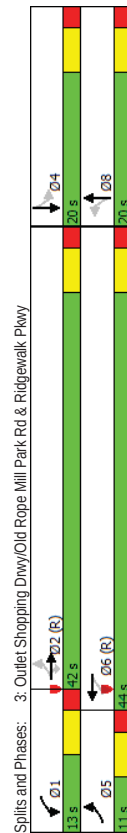
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	47	517	0	0	499	177	45	0	395	0	0	0
Traffic Volume (vph)	47	517	0	0	499	177	45	0	395	0	0	0
Future Volume (vph)	47	517	0	0	499	177	45	0	395	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3			6.3	6.3			6.3	6.3		
Lane Util. Factor	1.00	1.00			0.95	1.00			1.00	1.00		
Flt Protected	0.95	1.00			1.00	1.00			0.95	1.00		
Satd. Flow (prot)	1770	1863			3539	1863			1770	1863		
Flt Permitted	0.42	1.00			1.00	1.00			0.95	1.00		
Satd. Flow (perm)	785	1863			3539	1863			1770	1863		
Peak-hour factor, PHF	0.72	0.94	0.92	0.92	0.82	0.82	0.79	0.92	0.88	0.92	0.92	0.92
Adj. Flow (vph)	65	550	0	0	609	216	57	0	449	0	0	0
RTOR Reduction (vph)	0	0	0	0	52	0	0	0	0	0	0	0
Lane Group Flow (vph)	65	550	0	0	609	164	0	57	449	0	0	0
Turn Type	Perm	NA	NA	Perm	Perm	Perm	NA	Free	Free	NA	Free	Free
Protected Phases	2	2			6	6	8					
Permitted Phases	2	2			6	6	8					
Actuated Green, G (s)	57.0	57.0			57.0	57.0	54		54			
Effective Green, g (s)	57.0	57.0			57.0	57.0	54		54			
Actuated g/C Ratio	0.76	0.76			0.76	0.76	0.07		0.07			
Clearance Time (s)	6.3	6.3			6.3	6.3	6.3		6.3			
Vehicle Extension (s)	5.0	5.0			5.0	5.0	3.0		3.0			
Lane Grp Cap (vph)	596	1415			2689	1203	127		1583			
v/s Ratio Prot	0.30				0.17							
v/c Ratio	0.08	0.11			0.23	0.14	0.45		0.28			
Uniform Delay, d1	2.4	3.1			2.6	2.4	33.4		0.0			
Progression Factor	0.31	0.24			0.48	0.37	1.00		1.00			
Incremental Delay, d2	0.2	0.5			0.2	0.2	2.5		0.4			
Delay (s)	1.0	1.2			1.4	1.1	35.9		0.4			
Level of Service	A	A			A	A	D		A			
Approach Delay (s)	1.2				1.4		4.4		0.0			
Approach LOS	A				A		A		A			
Intersection Summary												
HCM 2000 Control Delay					2.1							
HCM 2000 Volume to Capacity ratio					0.41							
Actuated Cycle Length (s)					75.0							
Intersection Capacity Utilization					70.0%							
Analysis Period (min)					15							
c Critical Lane Group												

Queues
3. Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

No-Build AM
1/20/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	←	←	←	←	←	←	←	←	←
Traffic Volume (vph)	76	615	223	64	480	116	6	32	11
Future Volume (vph)	76	615	223	64	480	116	6	32	11
Lane Group Flow (vph)	106	686	226	79	642	136	85	44	97
Turn Type	pm-pt	NA	Perm	pm-pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	2	1	6	8	8	4	4
Permitted Phases	2	2	2	2	2	2	2	2	2
Detector Phase	5	2	2	1	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Total Split (s)	11.0	42.0	42.0	13.0	44.0	20.0	20.0	20.0	20.0
Total Split (%)	14.7%	56.0%	56.0%	17.3%	58.7%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.19	0.34	0.24	0.15	0.30	0.67	0.27	0.22	0.31
Control Delay	4.3	7.2	0.9	3.2	6.3	45.9	12.8	29.2	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.3	7.2	0.9	3.2	6.3	45.9	12.8	29.2	12.7
Queue Length 50th (ft)	9	62	0	8	64	59	7	18	9
Queue Length 95th (ft)	17	92	7	11	69	106	0	35	12
Internal Link Dist (ft)	534			686		232		281	
Turn Bay Length (ft)	275	410	268			201		368	
Base Capacity (vph)	554	2021	953	534	2128	241	361	244	368
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.34	0.24	0.15	0.30	0.56	0.24	0.18	0.26

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 63 (84%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated



HCM Signalized Intersection Capacity Analysis
3. Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

No-Build AM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	←	←	←	←	←	←	←	←	←	←
Traffic Volume (vph)	76	615	223	64	480	46	116	6	56	32
Future Volume (vph)	76	615	223	64	480	46	116	6	56	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Fit	1.00	0.99	0.85	1.00	0.98	1.00	0.88	1.00	0.88	1.00
Fit Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3372	1441	1770	3470	1770	1646	1770	1647	1647
Fit Permitted	0.40	1.00	1.00	0.35	1.00	0.69	1.00	0.70	1.00	1.00
Satd. Flow (perm)	748	3372	1441	643	3470	1293	1646	1307	1647	1647
Peak-hour factor, PHF	0.72	0.93	0.89	0.81	0.86	0.55	0.85	0.31	0.85	0.72
Adj. Flow (vph)	106	661	251	79	558	84	136	19	66	44
RTOR Reduction (vph)	0	3	102	0	14	0	0	57	0	65
Lane Group Flow (vph)	106	683	124	79	628	0	136	28	0	44
Turn Type	pm-pt	NA	Perm	pm-pt	NA	Perm	NA	Perm	NA	NA
Protected Phases	5	2	2	1	6	8	8	4	4	4
Permitted Phases	2	2	2	2	2	2	2	2	2	2
Actuated Green, G (s)	45.8	41.3	41.3	47.6	42.2	10.3	10.3	10.3	10.3	10.3
Effective Green, g (s)	45.8	41.3	41.3	47.6	42.2	10.3	10.3	10.3	10.3	10.3
Actuated g/C Ratio	0.61	0.55	0.55	0.63	0.56	0.14	0.14	0.14	0.14	0.14
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	518	1856	793	489	1952	177	226	179	226	226
v/s Ratio Prot	c0.01	c0.20	0.09	0.09	0.18	c0.11		0.03		0.02
v/s Ratio Perm	0.20	0.37	0.16	0.16	0.32	0.77	0.12	0.25	0.14	0.14
Uniform Delay, d1	6.1	9.5	8.3	5.3	8.8	31.2	28.4	28.9	28.5	28.5
Progression Factor	0.71	0.63	0.18	0.55	0.64	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.5	0.4	0.2	0.4	18.0	0.2	0.7	0.3	0.3
Delay (s)	4.5	6.5	1.9	3.1	6.1	49.2	28.6	29.6	28.8	28.8
Level of Service	A	A	A	A	A	D	C	C	C	C
Approach Delay (s)	5.3			5.7		41.3		29.0		
Approach LOS	A			A		D		C		

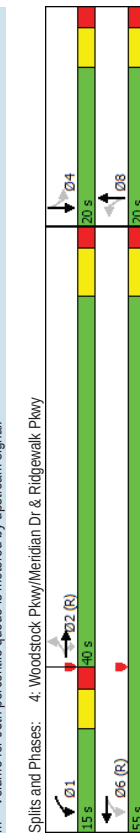
Intersection Summary
HCM 2000 Control Delay
HCM 2000 Volume to Capacity ratio
Actuated Cycle Length (s)
Intersection Capacity Utilization
Analysis Period (min)
c Critical Lane Group

Queues
4: Woodstock Pkwy/Meridian Dr & Ridgewalk Pkwy

No-Build AM
1/20/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	1	511	204	220	488	86	2	2	6
Traffic Volume (vph)	1	511	204	220	488	86	2	2	6
Future Volume (vph)	1	511	204	220	488	86	2	2	6
Lane Group Flow (vph)	4	549	219	242	540	115	158	0	28
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	1	6	8	8	4	4
Permitted Phases	2	2	2	1	6	8	8	4	4
Detector Phase	2	2	2	1	6	8	8	4	4
Switch Phase	2	2	2	1	6	8	8	4	4
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	6.4	6.4	6.0	6.0
Minimum Split (s)	22.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Total Split (s)	40.0	40.0	40.0	15.0	55.0	20.0	20.0	20.0	20.0
Total Split (%)	53.3%	53.3%	53.3%	20.0%	73.3%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	4.3	4.3	4.3	3.6	4.3	3.6	3.6	3.6	3.6
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.01	0.31	0.24	0.39	0.22	0.56	0.43	0.11	0.11
Control Delay	7.0	6.9	0.9	7.8	6.3	39.9	9.3	18.3	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	6.9	0.9	7.8	6.3	39.9	9.3	18.3	18.3
Queue Length 50th (ft)	0	36	1	59	72	50	2	6	6
Queue Length 95th (ft)	1	48	1	m128	134	78	0	16	16
Internal Link Dist (ft)	686	110	90	555	531	144	144	144	144
Turn Bay Length (ft)	423	1784	906	631	2450	264	429	326	326
Base Capacity (vph)	0	0	0	0	0	0	0	0	0
Stationing Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.31	0.24	0.38	0.22	0.44	0.37	0.09	0.09

Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 68 (91%), Referenced to phase 2EBTL and 6:WBLT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

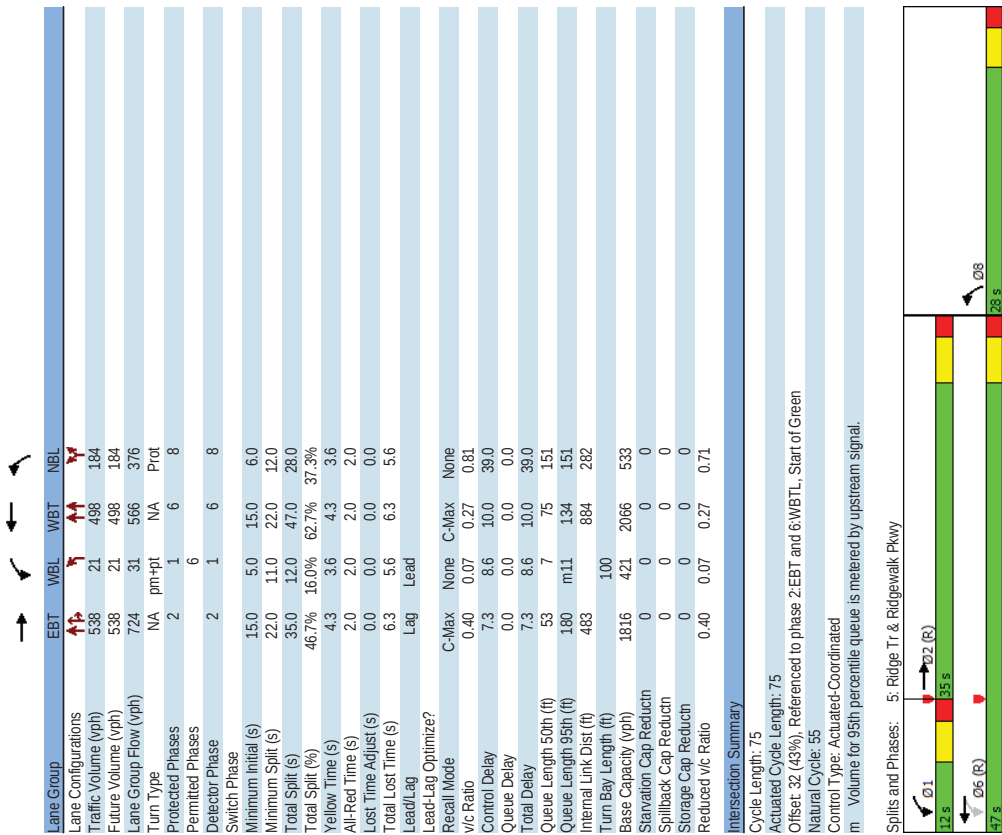


HCM Signalized Intersection Capacity Analysis
4: Woodstock Pkwy/Meridian Dr & Ridgewalk Pkwy

No-Build AM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	1	511	204	220	488	86	2	2	6
Traffic Volume (vph)	1	511	204	220	488	86	2	2	6
Future Volume (vph)	1	511	204	220	488	86	2	2	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Flow Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	0.99
Satd. Flow (prot)	1770	3539	1583	1770	3535	1770	1590	1725	1725
Flt Permitted	0.45	1.00	1.00	0.38	1.00	0.74	1.00	0.95	0.95
Satd. Flow (perm)	840	3539	1583	710	3535	1377	1590	1642	1642
Peak-hour factor, PHF	0.25	0.93	0.93	0.91	0.91	0.25	0.75	0.50	0.62
Adj. Flow (vph)	4	549	219	242	536	4	115	4	10
RTOR Reduction (vph)	0	0	108	0	1	0	0	131	0
Lane Group Flow (vph)	4	549	111	242	539	0	115	27	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	1	6	8	8	4	4
Permitted Phases	2	2	2	1	6	8	8	4	4
Actuated Green, G (s)	37.9	37.9	37.9	52.0	52.0	11.1	11.1	11.1	11.1
Effective Green, g (s)	37.9	37.9	37.9	52.0	52.0	11.1	11.1	11.1	11.1
Actuated g/C Ratio	0.51	0.51	0.51	0.69	0.69	0.15	0.15	0.15	0.15
Clearance Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Vehicle Extension (s)	5.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	424	1788	799	612	2450	203	235	243	243
v/s Ratio Prot	0.16	0.07	0.07	c0.04	0.15	c0.08	0.02	0.01	0.01
v/c Ratio	0.01	0.31	0.14	0.40	0.22	0.57	0.11	0.07	0.07
Uniform Delay, d1	9.2	10.9	9.9	4.5	4.2	29.7	27.7	27.5	27.5
Progression Factor	0.60	0.55	0.14	1.38	1.34	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.4	0.3	0.4	0.2	3.6	0.2	0.1	0.1
Delay (s)	5.6	6.4	1.8	6.6	5.8	33.3	27.9	27.6	27.6
Level of Service	A	A	A	A	A	C	C	C	C
Approach Delay (s)	5.1	7.0	6.0	6.0	6.0	30.2	27.6	27.6	27.6
Approach LOS	A	A	A	A	A	C	C	C	C

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



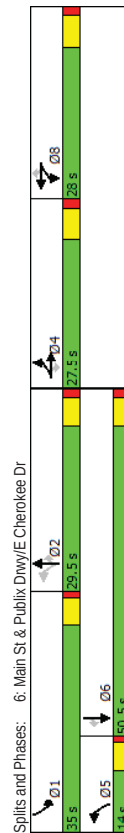
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Volume (vph)	538	84	21	498	184	77
Future Volume (vph)	538	84	21	498	184	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	5.6	6.3	5.6	5.6	5.6
Lane Util. Factor	0.95	1.00	0.95	1.00	0.97	0.97
Flt Protected	0.98	1.00	0.95	1.00	0.96	0.96
Satd. Flow (prot)	3467	1770	3539	1735		
Flt Permitted	1.00	0.29	1.00	0.96		
Satd. Flow (perm)	3467	533	3539	1735		
Peak-hour factor, PHF	0.86	0.86	0.88	0.88	0.85	0.83
Adj. Flow (vph)	626	98	31	566	283	93
RTOR Reduction (vph)	14	0	0	0	16	0
Lane Group Flow (vph)	710	0	31	566	360	0
Turn Type	NA	pm+pt	NA	Prot		
Protected Phases	2	1	6	8		
Permitted Phases		6				
Actuated Green, G (s)	35.6	43.8	43.8	19.3		
Effective Green, g (s)	35.6	43.8	43.8	19.3		
Actuated g/C Ratio	0.47	0.58	0.58	0.26		
Clearance Time (s)	6.3	5.6	6.3	5.6		
Vehicle Extension (s)	5.0	3.0	5.0	3.0		
Lane Grp Cap (vph)	1645	354	2066	446		
v/s Ratio Prot	c0.20	0.00	c0.16	c0.21		
v/c Ratio Perm	0.43	0.09	0.27	0.81		
Uniform Delay, d1	13.0	7.3	7.7	26.1		
Progression Factor	0.53	1.11	1.16	1.00		
Incremental Delay, d2	0.8	0.1	0.3	10.2		
Delay (s)	7.7	8.2	9.2	36.3		
Level of Service	A	A	A	D		
Approach Delay (s)	7.7		9.2	36.3		
Approach LOS	A		A	D		
Intersection Summary						
HCM 2000 Control Delay		14.5			HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio		0.56				
Actuated Cycle Length (s)		75.0			Sum of lost time (s)	17.5
Intersection Capacity Utilization		42.4%			ICU Level of Service	A
Analysis Period (min)		15				
c Critical Lane Group						

Queues
6: Main St & Publix Drwy/E Cherokee Dr

No-Build AM
1/20/2016

Lane Group	EBT	EBL	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4	4	4
Traffic Volume (vph)	116	116	116	19	517	22	303	18	110	315	512	551
Future Volume (vph)	116	116	116	19	517	22	303	18	110	315	512	551
Ideal Flow (vphpl)	171	171	171	36	301	306	356	36	167	375	632	706
Turn Type	NA	Perm	Split	NA	Perm	Split	NA	Perm	Split	NA	Perm	Split
Protected Phases	4	4	4	8	8	8	8	8	8	8	8	8
Permitted Phases	4	4	4	8	8	8	8	8	8	8	8	8
Detector Phase	4	4	4	8	8	8	8	8	8	8	8	8
Switch Phase	4	4	4	8	8	8	8	8	8	8	8	8
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
Total Split (%)	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
Total Split (%)	22.9%	22.9%	22.9%	23.3%	23.3%	23.3%	23.3%	23.3%	23.3%	23.3%	23.3%	23.3%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	None	None	None	None	None	None	None	None	None	None	None	None
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
v/c Ratio	0.65	0.10	0.87	0.87	0.87	0.58	0.18	0.42	0.59	0.82	0.90	0.02
Control Delay	58.8	0.5	68.0	68.7	8.7	20.3	42.1	8.4	49.2	47.8	0.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.8	0.5	68.0	68.7	8.7	20.3	42.1	8.4	49.2	47.8	0.0	0.0
Queue Length 50th (ft)	120	0	228	232	0	12	102	0	226	492	0	0
Queue Length 95th (ft)	147	0	433	205	61	17	130	58	260	4620	0	0
Internal Link Dist (ft)	33	935	650	300	100	546	255	330	494	494	120	0
Turn Bay Length (ft)	376	454	347	351	610	214	431	655	969	789	743	0
Base Capacity (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.08	0.87	0.87	0.58	0.17	0.39	0.57	0.65	0.89	0.02	0.02

Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 107.4												
Natural Cycle: 115												
Control Type: Actuated-Uncoordinated												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												



HCM Signalized Intersection Capacity Analysis
6: Main St & Publix Drwy/E Cherokee Dr

No-Build AM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	3	116	19	517	22	303	18	110	315	512	551	8
Traffic Volume (vph)	3	116	19	517	22	303	18	110	315	512	551	8
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	0.85	1.00	1.00	0.97	1.00	0.85
Flt	1.00	0.85	1.00	0.95	1.00	1.00	0.85	1.00	1.00	0.95	1.00	0.85
Flt Protected	1.00	1.00	0.95	0.96	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1858	1583	1681	1696	1983	1770	1863	1583	1983	1681	1583	1583
Flt Permitted	1.00	1.00	0.95	0.96	1.00	1.00	0.16	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1858	1583	1681	1696	1583	295	1863	1583	1863	1583	1863	1583
Peak-hour factor, PHF	0.38	0.71	0.53	0.91	0.56	0.85	0.50	0.66	0.84	0.81	0.78	0.58
Adj. Flow (vph)	8	163	36	568	39	356	36	167	375	632	706	14
RTOR Reduction (vph)	0	0	31	0	0	284	0	0	288	0	0	8
Lane Group Flow (vph)	0	171	5	301	306	72	36	167	87	632	706	6
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	4	8	8	8	5	2	2	1	6	6
Permitted Phases	4	4	4	8	8	8	5	2	2	1	6	6
Actuated Green, G (s)	15.2	15.2	22.2	22.2	22.2	22.2	29.8	25.3	25.3	24.2	45.0	45.0
Effective Green, g (s)	15.2	15.2	22.2	22.2	22.2	22.2	29.8	25.3	25.3	24.2	45.0	45.0
Actuated g/c Ratio	0.14	0.14	0.20	0.20	0.20	0.20	0.27	0.23	0.23	0.22	0.41	0.41
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	258	219	341	344	321	141	430	366	759	766	651	651
v/s Ratio Prot	c0.09	0.00	0.18	c0.18	0.05	0.06	0.01	0.09	0.05	c0.18	c0.38	0.00
v/s Ratio Perm	0.66	0.02	0.88	0.89	0.23	0.26	0.39	0.24	0.83	0.92	0.01	0.00
v/c Ratio	44.7	40.7	42.3	42.4	36.4	30.8	35.5	34.2	40.7	30.5	19.0	19.0
Uniform Delay, d1	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Progression Factor	6.3	0.0	22.5	23.2	0.4	1.0	1.2	0.7	7.8	17.1	0.0	0.0
Incremental Delay, d2	50.9	40.7	64.8	65.6	36.8	31.8	36.7	34.9	48.5	47.7	19.0	19.0
Delay (s)	D	D	E	E	D	C	D	C	D	D	D	B
Level of Service	49.2	40.7	64.8	65.6	36.8	31.8	36.7	34.9	48.5	47.7	19.0	19.0
Approach Delay (s)	49.2	40.7	64.8	65.6	36.8	31.8	36.7	34.9	48.5	47.7	19.0	19.0
Approach LOS	D	D	E	E	D	C	D	C	D	D	D	D

Intersection Summary												
HCM 2000 Control Delay												
HCM 2000 Volume to Capacity ratio												
Actuated Cycle Length (s)												
Intersection Capacity Utilization												
Analysis Period (min)												
Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
7: Main St & Rope Mill Rd/E Main St

No-Build AM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	13	2	149	1	0	0	116	199	2	4	531	28
Traffic Volume (veh/h)	13	2	149	1	0	0	116	199	2	4	531	28
Future Volume (Veh/h)	13	2	149	1	0	0	116	199	2	4	531	28
Sign Control	Stop	0%	0%	Stop	0%	0%	Free	0%	0%	Free	0%	0%
Grade	0.38	0.25	0.69	0.25	0.92	0.92	0.42	0.90	0.50	0.33	0.88	0.57
Peak Hour Factor	34	8	216	4	0	0	276	221	4	12	603	49
Hourly flow rate (vph)												
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage (veh)												
Upstream signal (ft)												
pX platoon unblocked												
VC, conflicting volume	1426	1428	628	1646	1451	223	652					225
VC1, stage 1 conf vol												
VC2, stage 2 conf vol	1426	1428	628	1646	1451	223	652					225
VCu, unblocked vol	7.1	6.5	6.2	7.1	6.5	6.2	4.1					4.1
IC, single (s)												
IC, 2 stage (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2					2.2
IF (s)	61	92	55	87	100	100	70					99
p0 queue free %	87	94	483	32	91	817	935					1344
CM capacity (veh/h)												
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	258	4	501	664								
Volume Left	34	4	276	12								
Volume Right	216	0	4	49								
cSH	279	32	935	1344								
Volume to Capacity	0.92	0.13	0.30	0.01								
Queue Length 95th (ft)	215	10	31	1								
Control Delay (s)	76.2	135.0	7.4	0.2								
Lane LOS	F	F	A	A								
Approach Delay (s)	76.2	135.0	7.4	0.2								
Approach LOS	F	F										
Intersection Summary												
Average Delay												
Intersection Capacity Utilization												
Analysis Period (min)												

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HCM Unsignalized Intersection Capacity Analysis
8: Woodstock Pkwy & Outlet Shopping Drwy/Rope Mill Rd

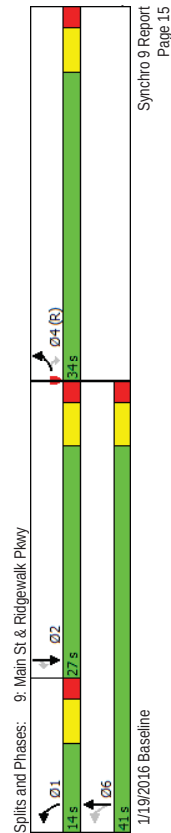
No-Build AM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	26	40	43	70	40	60	66	109	50	63	222	30
Future Volume (veh/h)	26	40	43	70	40	60	66	109	50	63	222	30
Peak Hour Factor	0.67	0.75	0.81	0.66	0.60	0.75	0.62	0.82	0.75	0.79	0.73	0.75
Hourly flow rate (vph)	39	53	53	106	67	80	106	133	67	80	304	40
Approach Volume (veh/h)	145	253						306			424	
Crossing Volume (veh/h)	490							172			279	
High Capacity (veh/h)	941							1210			1113	
High v/c (veh/h)	0.15							0.25			0.38	
Low Capacity (veh/h)	761							1003			915	
Low v/c (veh/h)	0.19							0.31			0.46	
Intersection Summary												
Maximum v/c High								0.38				
Maximum v/c Low								0.46				
Intersection Capacity Utilization								43.2%				
ICU Level of Service								A				

1/19/2016 Baseline

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	429	178	53	168	352	436
Future Volume (vph)	429	178	53	168	352	436
Lane Group Flow (vph)	505	207	58	213	374	513
Turn Type	Prot	Perm	pm-pt	NA	NA	Perm
Protected Phases	4	4	6	2	2	2
Permitted Phases	4	4	1	6	2	2
Detector Phase	4	4	1	6	2	2
Switch Phase	4	4	1	6	2	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	10.0	22.0	22.0	22.0
Minimum Split (%)	34.0	34.0	14.0	41.0	27.0	27.0
Total Split (%)	45.3%	45.3%	18.7%	54.7%	36.0%	36.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	None	None	None	None
v/c Ratio	0.58	0.24	0.22	0.33	0.83	0.68
Control Delay	10.5	0.8	14.6	17.2	43.0	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.5	0.8	14.6	17.2	43.0	7.9
Queue Length 50th (ft)	216	0	15	60	159	7
Queue Length 95th (ft)	77	m0	33	84	#289	60
Internal Link Dist (ft)	1155		596	714		
Turn Bay Length (ft)			177		110	
Base Capacity (vph)	866	880	282	869	521	798
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.24	0.21	0.25	0.72	0.64
Intersection Summary						
Cycle Length: 75						
Actuated Cycle Length: 75						
Offset: 68 (91%), Referenced to phase 4EBL Start of Green						
Natural Cycle: 60						
Control Type: Actuated-Coordinated						
# 95th percentile volume exceeds capacity, queue may be longer.						
Queue shown is maximum after two cycles.						
m Volume for 95th percentile queue is metered by upstream signal.						

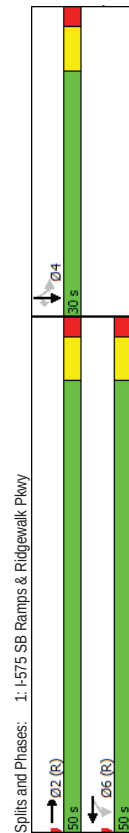


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	429	178	53	168	352	436
Future Volume (vph)	429	178	53	168	352	436
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Flt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.21	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	386	1863	1863	1583
Peak-hour factor, PHF	0.85	0.86	0.92	0.79	0.94	0.85
Adj. Flow (vph)	505	207	58	213	374	513
RTOR Reduction (vph)	0	112	0	0	0	374
Lane Group Flow (vph)	505	95	58	213	374	139
Turn Type	Prot	Perm	pm-pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6		2	
Actuated Green, G (s)	34.3	34.3	28.7	28.7	18.2	18.2
Effective Green, g (s)	34.3	34.3	28.7	28.7	18.2	18.2
Actuated g/c Ratio	0.46	0.46	0.38	0.38	0.24	0.24
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	5.0	5.0	5.0
Lane Grp Cap (vph)	809	723	230	712	452	384
v/s Ratio Prot	c0.29		0.02	c0.11	c0.20	
v/c Ratio Perm	0.62	0.13	0.25	0.30	0.83	0.36
v/c Ratio	15.5	11.7	16.3	16.1	26.9	23.6
Uniform Delay, d1	0.40	0.07	1.00	1.00	1.00	1.00
Progression Factor	3.3	0.3	0.6	0.5	13.1	1.2
Incremental Delay, d2	9.6	1.2	16.9	16.6	40.0	24.8
Delay (s)	A	A	B	B	D	C
Level of Service	A	A	B	B	D	C
Approach Delay (s)	7.1		16.7	31.2		
Approach LOS	A		B	C		
Intersection Summary						
HCM 2000 Control Delay						
HCM 2000 Volume to Capacity ratio						
Actuated Cycle Length (s)						
Intersection Capacity Utilization						
Analysis Period (min)						
c Critical Lane Group						

Queues
1: I-575 SB Ramps & Ridgewalk Pkwy

No-Build PM
1/20/2016

Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Configurations	EB	WB	WB	SB	SB
Traffic Volume (vph)	108	693	245	2	41
Future Volume (vph)	108	693	245	2	41
Lane Group Flow (vph)	237	753	278	286	53
Turn Type	NA	Perm	NA	NA	Perm
Protected Phases	2	6	6	4	4
Permitted Phases	2	6	6	4	4
Detector Phase	2	6	6	4	4
Switch Phase	2	6	6	4	4
Minimum Initial (s)	15.0	15.0	15.0	6.0	6.0
Minimum Split (s)	21.3	22.0	22.0	13.0	13.0
Total Split (s)	50.0	50.0	50.0	30.0	30.0
Total Split (%)	62.5%	62.5%	62.5%	37.5%	37.5%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	C-Max	C-Max	C-Max	None	None
v/c Ratio	0.21	1.07	0.24	0.72	0.13
Control Delay	6.0	69.7	4.6	38.8	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.0	69.7	4.6	38.8	7.5
Queue Length 50th (ft)	32	~426	37	132	0
Queue Length 95th (ft)	60	#678	54	96	18
Internal Link Dist (ft)	563	559	412		
Turn Bay Length (ft)	1115	703	1152	525	506
Base Capacity (vph)	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.21	1.07	0.24	0.54	0.10
Intersection Summary					
Cycle Length: 80					
Actuated Cycle Length: 80					
Offset: 75 (94%), Referenced to phase 2 EBT and 6 WBT, Start of Green					
Natural Cycle: 90					
Control Type: Actuated-Coordinated					
Volume exceeds capacity, queue is theoretically infinite.					
Queue shown is maximum after two cycles.					
# 95th percentile volume exceeds capacity, queue may be longer.					
Queue shown is maximum after two cycles.					



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HCM Signalized Intersection Capacity Analysis
1: I-575 SB Ramps & Ridgewalk Pkwy

No-Build PM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	108	70	693	245	0	0	0	0	240	2	41
Future Volume (vph)	0	108	70	693	245	0	0	0	0	240	2	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1760	1770	1863	1770	1863	1770	1863	1770	1863	1770	1863	1770
Flt Permitted	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1760	1770	1863	1770	1863	1770	1863	1770	1863	1770	1863	1770
Peak-hour factor, PHF	0.92	0.77	0.72	0.92	0.88	0.92	0.92	0.92	0.92	0.85	0.50	0.77
Adj. Flow (vph)	0	140	97	753	278	0	0	0	0	282	4	53
RTOR Reduction (vph)	0	26	0	0	0	0	0	0	0	0	0	41
Lane Group Flow (vph)	0	211	0	753	278	0	0	0	0	0	0	286
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases	2	6	6	4	4	4	4	4	4	4	4	4
Permitted Phases	2	6	6	4	4	4	4	4	4	4	4	4
Actuated Green, G (s)	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5
Effective Green, g (s)	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5
Actuated g/c Ratio	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	1089	704	1152	704	1152	704	1152	704	1152	704	1152	704
v/s Ratio Prot	0.12	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
v/c Ratio	0.19	1.07	0.24	1.07	0.24	1.07	0.24	1.07	0.24	1.07	0.24	1.07
Uniform Delay, d1	6.6	15.2	6.8	15.2	6.8	15.2	6.8	15.2	6.8	15.2	6.8	15.2
Progression Factor	1.00	0.63	0.52	0.63	0.52	0.63	0.52	0.63	0.52	0.63	0.52	0.63
Incremental Delay, d2	0.4	53.4	0.5	53.4	0.5	53.4	0.5	53.4	0.5	53.4	0.5	53.4
Delay (s)	7.0	63.1	4.1	63.1	4.1	63.1	4.1	63.1	4.1	63.1	4.1	63.1
Level of Service	A	E	A	A	E	A	E	A	E	A	E	A
Approach Delay (s)	7.0	47.2	4.1	47.2	4.1	47.2	4.1	47.2	4.1	47.2	4.1	47.2
Approach LOS	A	D	A	D	A	D	A	D	A	D	A	D
Intersection Summary												
HCM 2000 Control Delay	38.4	HCM 2000 Level of Service	D	38.4	HCM 2000 Level of Service	D	38.4	HCM 2000 Level of Service	D	38.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98			0.98			0.98			0.98		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.6	80.0	Sum of lost time (s)	12.6	80.0	Sum of lost time (s)	12.6	80.0	Sum of lost time (s)	12.6
Intersection Capacity Utilization	69.9%	ICU Level of Service	C	69.9%	ICU Level of Service	C	69.9%	ICU Level of Service	C	69.9%	ICU Level of Service	C
Analysis Period (min)	15			15			15			15		
c Critical Lane Group												

1/19/2016 Baseline

Synchro 9 Report
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Queues
2: I-575 NB Ramps & Ridgewalk Pkwy

No-Build PM
1/20/2016

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	36	305	800	423	0	559
Future Volume (vph)	36	305	800	423	0	559
Lane Group Flow (vph)	56	339	833	455	158	582
Turn Type	Perm	NA	NA	Perm	NA	Free
Protected Phases	2	2	6	6	8	Free
Permitted Phases	2	2	6	6	8	Free
Detector Phase	2	2	6	6	8	Free
Switch Phase	2	2	6	6	8	Free
Minimum Initial (s)	15.0	15.0	6.0	6.0	5.7	
Minimum Split (s)	22.0	22.0	22.0	22.0	12.0	
Total Split (s)	52.0	52.0	52.0	52.0	28.0	
Total Split (%)	65.0%	65.0%	65.0%	65.0%	35.0%	
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	None
v/c Ratio	0.13	0.26	0.34	0.37	0.58	0.37
Control Delay	4.4	4.9	5.3	1.4	39.1	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.4	4.9	5.3	1.4	39.1	0.7
Queue Length 50th (ft)	2	13	62	0	74	0
Queue Length 95th (ft)	15	181	m86	m25	124	0
Internal Link Dist (ft)	559	534			615	
Turn Bay Length (ft)	420			225		
Base Capacity (vph)	418	1280	2432	1230	480	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.26	0.34	0.37	0.33	0.37
Intersection Summary						
Cycle Length: 80						
Actuated Cycle Length: 80						
Offset: 71 (89%), Referenced to phase 2:EBTL and 6:WBT. Start of Green						
Natural Cycle: 40						
Control Type: Actuated-Coordinated						
m Volume for 95th percentile queue is metered by upstream signal.						
Splits and Phases: 2: I-575 NB Ramps & Ridgewalk Pkwy						

HCM Signalized Intersection Capacity Analysis
2: I-575 NB Ramps & Ridgewalk Pkwy

No-Build PM
1/20/2016

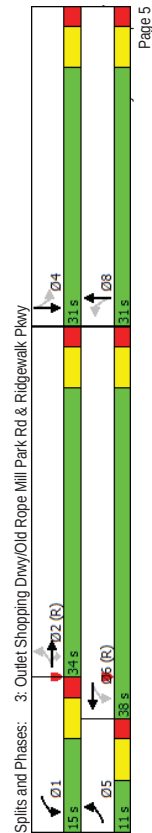
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	36	305	0	0	800	423	131	0	559	0	0	0
Future Volume (vph)	36	305	0	0	800	423	131	0	559	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3			6.3	6.3			6.3			
Lane Util. Factor	1.00	1.00			0.95	1.00			1.00			
Flt Protected	0.95	1.00			1.00	1.00			0.95			
Satd. Flow (prot)	1770	1863			3539	1983			1770			
Flt Permitted	0.33	1.00			1.00	1.00			0.95			
Satd. Flow (perm)	610	1863			3539	1583			1770			
Peak-hour factor, PHF	0.64	0.90	0.92	0.92	0.96	0.93	0.83	0.92	0.96	0.92	0.92	0.92
Adj. Flow (vph)	56	339	0	0	833	455	158	0	582	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	142	0	0	0	0	0	0
Lane Group Flow (vph)	56	339	0	0	833	313	0	158	582	0	0	0
Turn Type	Perm	NA			NA	Perm	Perm	NA	Free			
Protected Phases	2				6			8				
Permitted Phases	2				6			8				
Actuated Green, G (s)	55.0	55.0			55.0	55.0		12.4	80.0			
Effective Green, g (s)	55.0	55.0			55.0	55.0		12.4	80.0			
Actuated g/c Ratio	0.69	0.69			0.69	0.69		0.16	1.00			
Clearance Time (s)	6.3	6.3			6.3	6.3		6.3	6.3			
Vehicle Extension (s)	5.0	5.0			5.0	5.0		3.0				
Lane Grp Cap (vph)	419	1280			2433	1088		274	1583			
v/s Ratio Prot	0.09	0.18			0.24			0.09	0.37			
v/c Ratio Perm	0.13	0.26			0.34	0.29		0.58	0.37			
Uniform Delay, d1	4.3	4.8			5.1	4.9		31.4	0.0			
Progression Factor	0.67	0.81			0.90	1.18		1.00	1.00			
Incremental Delay, d2	0.6	0.5			0.2	0.4		2.9	0.7			
Delay (s)	3.5	4.3			4.9	6.2		34.3	0.7			
Level of Service	A	A			A	A		C	A			
Approach Delay (s)	4.2				5.3			7.8				0.0
Approach LOS	A				A			A				A
Intersection Summary												
HCM 2000 Control Delay												
HCM 2000 Volume to Capacity ratio												
Actuated Cycle Length (s)												
Intersection Capacity Utilization												
Analysis Period (min)												
c Critical Lane Group												

Queues

3. Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

No-Build PM
1/20/2016

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	71	580	256	76	776	283	21	57	15
Traffic Volume (vph)	71	580	256	76	776	283	21	57	15
Future Volume (vph)	71	580	256	76	776	283	21	57	15
Ideal Flow (vphpl)	76	640	262	101	964	311	159	66	333
Turn Type	pm-pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	2	1	6	8	8	4	4
Permitted Phases	2	2	2	6	6	8	8	4	4
Detector Phase	5	2	2	1	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Minimum Split (%)	11.0	34.0	34.0	15.0	38.0	31.0	31.0	31.0	31.0
Total Split (%)	13.8%	42.5%	42.5%	18.8%	47.5%	38.8%	38.8%	38.8%	38.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
All-Red Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?									
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.30	0.48	0.36	0.26	0.64	1.29	0.27	0.17	0.51
Control Delay	11.2	15.8	2.6	7.0	17.2	186.1	7.3	21.6	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Length	11.2	15.8	2.6	7.0	17.2	186.1	7.3	21.6	11.0
Queue Length 50th (ft)	14	95	0	20	174	~201	11	24	42
Queue Length 95th (ft)	31	137	17	20	210	#353	27	52	58
Internal Link Dist (ft)	275	534	410	268	686	232	281		
Turn Bay Length (ft)	253	1338	729	422	1499	241	599	381	650
Base Capacity (vph)	0	0	0	0	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.48	0.36	0.24	0.64	1.29	0.27	0.17	0.51



Intersection Capacity Analysis

3. Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

No-Build PM
1/20/2016

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	71	580	256	76	776	283	21	57	15
Traffic Volume (vph)	71	580	256	76	776	283	21	57	15
Future Volume (vph)	71	580	256	76	776	283	21	57	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	1.00	1.00
Fit	1.00	0.99	0.85	1.00	0.98	1.00	0.88	1.00	0.86
Fit Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1770	3367	1441	1770	3478	1770	1638	1770	1601
Fit Permitted	0.20	1.00	1.00	0.30	1.00	0.41	1.00	0.66	1.00
Satd. Flow (perm)	373	3367	1441	550	3478	772	1638	1222	1601
Peak-hour factor, PHF	0.94	0.95	0.88	0.75	0.91	0.63	0.91	0.88	0.75
Adj. Flow (vph)	76	611	291	101	853	111	311	66	21
RTOR Reduction (vph)	0	4	162	0	12	0	0	88	0
Lane Group Flow (vph)	76	636	100	101	952	0	311	71	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	2	1	6	8	8	4	4
Permitted Phases	2	2	2	6	6	8	8	4	4
Actuated Green, G (s)	34.5	30.5	30.5	39.5	33.0	25.0	25.0	25.0	25.0
Effective Green, g (s)	34.5	30.5	30.5	39.5	33.0	25.0	25.0	25.0	25.0
Actuated g/c Ratio	0.43	0.38	0.38	0.49	0.41	0.31	0.31	0.31	0.31
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	230	1283	549	370	1434	241	511	381	500
v/s Ratio Prot	0.02	0.19	0.07	0.11	0.02	0.04	0.04	0.05	0.11
v/s Ratio Perm	0.13	0.50	0.18	0.27	0.66	1.29	0.14	0.17	0.36
v/c Ratio	0.33	0.50	0.18	0.27	0.66	1.29	0.14	0.17	0.36
Uniform Delay, d1	14.2	18.9	16.5	11.4	19.0	27.5	19.8	20.0	21.3
Progression Factor	0.84	0.76	0.45	0.60	0.81	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	1.3	0.7	0.4	2.3	158.1	0.1	0.2	0.5
Delay (s)	12.8	15.8	8.1	7.2	17.7	185.6	19.9	20.2	21.8
Level of Service	B	B	A	A	B	F	B	C	C
Approach Delay (s)	13.5			16.7		129.6		21.5	
Approach LOS	B			B		F		C	

Intersection Summary

HCM 2000 Control Delay

HCM 2000 Volume to Capacity ratio

Actuated Cycle Length (s)

Intersection Capacity Utilization

Analysis Period (min)

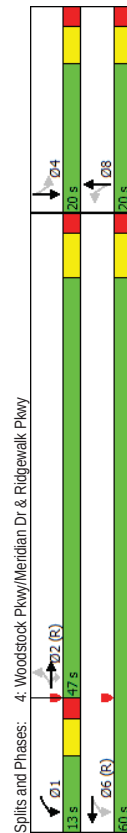
c Critical Lane Group

Queues
4: Woodstock Pkwy/Meridian Dr & Ridgeway Pkwy

No-Build PM
1/20/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	←	←	←	←	←	←	←	←	←
Traffic Volume (vph)	11	685	63	97	794	118	8	1	2
Future Volume (vph)	11	685	63	97	794	118	8	1	2
Ideal Flow (vphpl)	22	714	84	120	937	137	262	0	22
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	NA
Protected Phases	2	2	2	1	6	8	8	4	4
Permitted Phases	2	2	2	2	1	6	8	4	4
Detector Phase	2	2	2	2	1	6	8	4	4
Switch Phase	2	2	2	2	1	6	8	4	4
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	6.4	6.4	6.0	6.0
Minimum Split (s)	22.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Minimum Split (%)	47.0	47.0	47.0	13.0	60.0	20.0	20.0	20.0	20.0
Total Split (%)	58.8%	58.8%	58.8%	16.3%	75.0%	25.0%	25.0%	25.0%	25.0%
Yellow Time (s)	4.3	4.3	4.3	3.6	4.3	3.6	3.6	3.6	3.6
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.07	0.35	0.09	0.23	0.38	0.66	0.58	0.10	0.10
Control Delay	2.5	3.3	0.3	4.2	4.1	46.7	11.1	18.4	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.5	3.3	0.3	4.2	4.1	46.7	11.1	18.4	18.4
Queue Length 50th (ft)	1	17	0	11	55	64	8	3	3
Queue Length 95th (ft)	2	20	0	25	91	114	0	10	10
Internal Link Dist (ft)	666	110	90	555	555	531	144	144	144
Turn Bay Length (ft)	110	110	90	555	555	531	144	144	144
Base Capacity (vph)	324	2025	953	525	2473	249	488	259	259
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.35	0.09	0.23	0.38	0.55	0.54	0.08	0.08

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 4 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	



HCM Signalized Intersection Capacity Analysis
4: Woodstock Pkwy/Meridian Dr & Ridgeway Pkwy

No-Build PM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	←	←	←	←	←	←	←	←	←
Traffic Volume (vph)	11	685	63	97	794	118	8	1	2
Future Volume (vph)	11	685	63	97	794	118	8	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.99	0.99
Satd. Flow (prot)	1770	3539	1583	1770	3531	1770	1603	1687	1687
Flt Permitted	0.31	1.00	1.00	0.32	1.00	0.74	1.00	0.81	0.81
Satd. Flow (perm)	568	3539	1583	587	3531	1384	1603	1376	1376
Peak-hour factor, PHF	0.50	0.96	0.75	0.81	0.86	0.42	0.86	0.44	0.81
Adj. Flow (vph)	22	714	84	120	923	14	137	18	244
RTOR Reduction (vph)	0	0	37	0	1	0	0	207	0
Lane Group Flow (vph)	22	714	47	120	936	0	137	55	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	1	6	8	8	4	4
Actuated Green, G (s)	44.7	44.7	44.7	56.0	56.0	12.1	12.1	12.1	12.1
Effective Green, g (s)	44.7	44.7	44.7	56.0	56.0	12.1	12.1	12.1	12.1
Actuated g/c Ratio	0.56	0.56	0.56	0.70	0.70	0.15	0.15	0.15	0.15
Clearance Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Vehicle Extension (s)	5.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	317	1977	884	495	2471	209	242	208	208
v/s Ratio Prot	0.20	0.03	0.03	0.15	0.03	0.10	0.03	0.01	0.01
v/c Ratio	0.07	0.36	0.05	0.24	0.38	0.66	0.23	0.05	0.05
Uniform Delay, d1	8.1	9.8	8.0	4.4	4.9	32.0	29.8	29.0	29.0
Progression Factor	0.21	0.27	0.07	0.77	0.70	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.5	0.1	0.2	0.4	7.2	0.5	0.1	0.1
Delay (s)	2.1	3.1	0.6	3.6	3.8	39.2	30.3	29.1	29.1
Level of Service	A	A	A	A	A	D	C	C	C
Approach Delay (s)	2.8	A	A	3.8	A	33.4	A	29.1	A
Approach LOS	A	A	A	A	A	C	C	C	C

c Critical Lane Group

Intersection Summary	
HCM 2000 Control Delay	8.8
HCM 2000 Volume to Capacity ratio	0.47
Actuated Cycle Length (s)	80.0
Intersection Capacity Utilization	63.0%
Analysis Period (min)	15

Sum of lost time (s)
ICU Level of Service

Queues
5: Ridge Tr & Ridgewalk Pkwy

No-Build PM
1/20/2016

Lane Group	EBT	WBL	WBT	NBL
Lane Configurations	↑↑	↑	↑↑	↑
Traffic Volume (vph)	707	82	747	131
Future Volume (vph)	707	82	747	131
Lane Group Flow (vph)	964	93	869	219
Turn Type	NA	pm+pt	NA	Prot
Protected Phases	2	1	6	8
Permitted Phases	6			
Detector Phase	2	1	6	8
Switch Phase				
Minimum Initial (s)	15.0	5.0	15.0	6.0
Minimum Split (s)	22.0	11.0	22.0	12.0
Total Split (s)	43.0	14.0	57.0	23.0
Total Split (%)	53.8%	17.5%	71.3%	28.8%
Yellow Time (s)	4.3	3.6	4.3	3.6
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	5.6	6.3	5.6
Lead/Lag	Lag	Lead		
Lead-Lag Optimize?				
Recall Mode	C-Max	None	C-Max	None
v/c Ratio	0.51	0.24	0.36	0.69
Control Delay	6.9	7.1	8.6	39.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.9	7.1	8.6	39.1
Queue Length 50th (ft)	52	19	119	92
Queue Length 95th (ft)	93	m25	182	141
Internal Link Dist (ft)	483		884	282
Turn Bay Length (ft)	100			
Base Capacity (vph)	1908	415	2401	393
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.51	0.22	0.36	0.56
Intersection Summary				
Cycle Length: 80				
Actuated Cycle Length: 80				
Offset: 20 (25%), Referenced to phase 2EBT and 6WBTL, Start of Green				
Natural Cycle: 50				
Control Type: Actuated-Coordinated				
m Volume for 95th percentile queue is metered by upstream signal.				
Splits and Phases: 5: Ridge Tr & Ridgewalk Pkwy				

HCM Signalized Intersection Capacity Analysis
5: Ridge Tr & Ridgewalk Pkwy

No-Build PM
1/20/2016

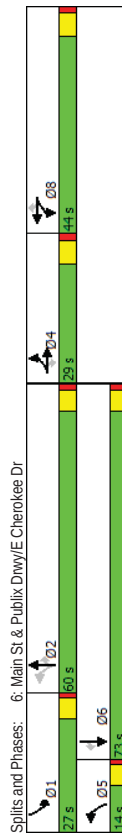
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Volume (vph)	707	157	82	747	131	54
Future Volume (vph)	707	157	82	747	131	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	5.6	6.3	5.6	5.6	5.6
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00
Flt Protected	1.00	0.95	1.00	0.95	1.00	0.97
Satd. Flow (prot)	3436	1770	3539	1730		
Flt Permitted	1.00	0.21	1.00	0.97		
Satd. Flow (perm)	3436	394	3539	1730		
Peak-hour factor, PHF	0.91	0.84	0.88	0.86	0.83	0.88
Adj. Flow (vph)	777	187	93	869	158	61
RTOR Reduction (vph)	23	0	0	0	18	0
Lane Group Flow (vph)	941	0	93	869	201	0
Turn Type	NA	pm+pt	NA	Prot		
Protected Phases	2	1	6	8		
Permitted Phases			6			
Actuated Green, G (s)	42.8	54.3	54.3	13.8		
Effective Green, g (s)	42.8	54.3	54.3	13.8		
Actuated g/c Ratio	0.53	0.68	0.68	0.17		
Clearance Time (s)	6.3	5.6	6.3	5.6		
Vehicle Extension (s)	5.0	3.0	5.0	3.0		
Lane Grp Cap (vph)	1838	368	2402	298		
v/s Ratio Prot	c0.27	c0.02	c0.25	c0.12		
v/c Ratio Perm	0.15					
v/c Ratio	0.51	0.25	0.36	0.67		
Uniform Delay, d1	11.9	5.8	5.5	31.0		
Progression Factor	0.48	1.27	1.40	1.00		
Incremental Delay, d2	1.0	0.2	0.3	5.9		
Delay (s)	6.7	7.6	7.9	36.9		
Level of Service	A	A	A	D		
Approach Delay (s)	6.7	7.9	36.9			
Approach LOS	A	A	D			
Intersection Summary						
HCM 2000 Control Delay		10.3				B
HCM 2000 Volume to Capacity ratio		0.55				
Actuated Cycle Length (s)		80.0				17.5
Intersection Capacity Utilization		54.2%				A
Analysis Period (min)		15				
c Critical Lane Group						

Queues
6: Main St & Publix Drwy/E Cherokee Dr

No-Build PM
1/20/2016

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4
Traffic Volume (vph)	81	75	389	78	423	108	421	600	327
Future Volume (vph)	41	81	75	389	78	423	108	421	600
Ideal Flow (vphpl)	174	101	294	298	516	119	468	698	367
Turn Type	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	NA
Protected Phases	4	4	8	8	5	2	2	1	6
Permitted Phases	4	4	8	8	5	2	2	1	6
Detector Phase	4	4	8	8	5	2	2	1	6
Switch Phase	4	4	8	8	5	2	2	1	6
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	15.0	15.0	8.0	15.0
Minimum Split (s)	27.5	27.5	27.5	27.5	14.0	26.0	26.0	14.0	32.0
Total Split (s)	29.0	29.0	44.0	44.0	44.0	60.0	60.0	27.0	73.0
Total Split (%)	18.1%	18.1%	27.5%	27.5%	8.8%	37.5%	37.5%	16.9%	45.6%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.0	1.5	1.5	1.0	1.5
All-Red Time (s)	1.5	1.5	1.5	1.5	1.0	1.5	1.5	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	5.0	5.5	5.5	5.0	5.5
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					None	None	Min	Min	Min
Recall Mode	None	None	None	None	None	None	None	None	None
v/c Ratio	0.70	0.31	0.77	0.74	0.25	0.82	0.80	0.74	0.36
Control Delay	73.2	7.0	64.5	63.7	15.7	21.5	55.4	66.3	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Length	73.2	7.0	64.5	63.7	15.7	21.5	55.4	66.3	30.9
Queue Length 50th (ft)	148	0	255	258	54	54	377	107	160
Queue Length 95th (ft)	226	6	375	290	131	103	572	249	254
Internal Link Dist (ft)	33		935			546		494	
Turn Bay Length (ft)			650		300	100	255	330	120
Base Capacity (vph)	340	397	518	529	793	478	823	1012	613
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.25	0.57	0.56	0.65	0.25	0.57	0.69	0.25

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 130.1	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	



HCM Signalized Intersection Capacity Analysis
6: Main St & Publix Drwy/E Cherokee Dr

No-Build PM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4
Traffic Volume (vph)	41	81	75	389	78	423	108	421	600	327
Future Volume (vph)	41	81	75	389	78	423	108	421	600	327
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.0	5.5	5.5
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00
Flt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.98	1.00	0.95	0.97	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1826	1583	1681	1718	1583	1770	1863	1583	3433	1863
Flt Permitted	0.98	1.00	0.95	0.97	1.00	0.60	1.00	0.60	0.95	1.00
Satd. Flow (perm)	1826	1583	1681	1718	1583	1118	1863	1583	3433	1863
Peak-hour factor, PHF	0.58	0.79	0.74	0.82	0.66	0.82	0.91	0.86	0.88	0.92
Adj. Flow (vph)	71	103	101	474	118	516	119	468	367	257
RTOR Reduction (vph)	0	0	87	0	0	340	0	386	0	0
Lane Group Flow (vph)	0	174	14	294	298	176	119	468	312	257
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	NA
Protected Phases	4	4	4	8	8	5	2	1	6	6
Permitted Phases	4	4	4	8	8	5	2	2	1	6
Actuated Green, G (s)	17.9	17.9	29.5	29.5	29.5	49.3	40.1	40.1	18.9	49.8
Effective Green, g (s)	17.9	17.9	29.5	29.5	29.5	49.3	40.1	40.1	18.9	49.8
Actuated g/c Ratio	0.14	0.14	0.23	0.23	0.23	0.38	0.31	0.31	0.15	0.39
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	253	219	384	393	362	474	579	492	503	719
v/s Ratio Prot	0.10		0.17	0.17		0.02	0.25	0.11	0.14	
v/s Ratio Perm		0.01			0.11	0.08		0.20		0.01
v/c Ratio	0.69	0.06	0.77	0.76	0.49	0.25	0.81	0.63	0.73	0.36
Uniform Delay, d1	52.8	48.2	46.5	46.4	43.1	26.3	40.9	38.1	52.6	28.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.6	0.1	8.8	8.2	1.0	0.3	9.2	3.7	5.3	0.6
Delay (s)	60.4	48.3	55.3	54.5	44.2	26.6	50.1	41.8	57.8	28.8
Level of Service	E	D	E	D	D	C	D	D	E	C
Approach Delay (s)	56.0		49.9			43.4			45.0	
Approach LOS	E		D			D			D	

Intersection Summary	
HCM 2000 Control Delay	46.9
HCM 2000 Volume to Capacity ratio	0.76
Actuated Cycle Length (s)	128.9
Intersection Capacity Utilization	69.6%
Analysis Period (min)	15
c Critical Lane Group	

HCM Unsignalized Intersection Capacity Analysis 7: Main St & Rope Mill Rd/E Main St No-Build PM 1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	17	0	112	10	4	0	100	441	8	0	400	30
Traffic Volume (veh/h)	17	0	112	10	4	0	100	441	8	0	400	30
Future Volume (Veh/h)	17	0	112	10	4	0	100	441	8	0	400	30
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
Grade	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.62	0.25	0.87	0.75	0.50	0.92	0.95	0.96	0.88	0.33	0.85	0.75
Hourly flow rate (vph)	27	0	129	13	8	0	105	459	9	0	471	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None				None
Median storage (veh)												
Upstream signal (ft)												
pX platoon unblocked												
VC, conflicting volume	1168	1169	491	1294	1184	464	511					468
VC1, stage 1 conf vol												
VC2, stage 2 conf vol												
VCu, unblocked vol	1168	1169	491	1294	1184	464	511					468
IC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1					4.1
IC, 2 stage (s)												
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2					2.2
p0 queue free %	82	100	78	87	95	100	90					100
CM capacity (veh/h)	152	174	578	100	170	599	1054					1094
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	156	21	573	511								
Volume Left	27	13	105	0								
Volume Right	129	0	9	40								
cSH	389	119	1054	1094								
Volume to Capacity	0.40	0.18	0.10	0.00								
Queue Length 95th (ft)	47	15	8	0								
Control Delay (s)	20.3	41.7	2.6	0.0								
Lane LOS	C	E	A									
Approach Delay (s)	20.3	41.7	2.6	0.0								
Approach LOS	C	E										
Intersection Summary												
Average Delay												4.4
Intersection Capacity Utilization												69.7%
Analysis Period (min)												15
												ICU Level of Service
												C

1/19/2016 Baseline

Synchro 9 Report
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HCM Unsignalized Intersection Capacity Analysis 8: Woodstock Pkwy & Outlet Shopping Drwy/Rope Mill Rd No-Build PM 1/20/2016

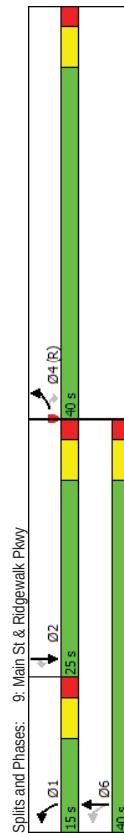
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	20	35	85	22	39	60	45	191	21	39	47	11
Future Volume (veh/h)	20	35	85	22	39	60	45	191	21	39	47	11
Peak Hour Factor	0.57	0.91	0.83	0.50	0.89	0.88	0.71	0.73	0.71	0.73	0.70	0.45
Hourly flow rate (vph)	35	38	102	44	44	68	63	262	30	53	67	24
Approach Volume (veh/h)												
Crossing Volume (veh/h)												
High Capacity (veh/h)												
High v/c (veh/h)												
Low Capacity (veh/h)												
Low v/c (veh/h)												
Intersection Summary												
Maximum v/c High												0.28
Maximum v/c Low												0.34
Intersection Capacity Utilization												31.7%
												ICU Level of Service
												A

1/19/2016 Baseline

Synchro 9 Report
Page 14

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	592	162	189	407	297	646
Future Volume (vph)	592	162	189	407	297	646
Lane Group Flow (vph)	643	180	199	457	323	798
Turn Type	Prot	Perm	pm+pt	NA	Perm	Perm
Protected Phases	4	4	1	6	2	2
Permitted Phases	4	4	1	6	2	2
Detector Phase	4	4	1	6	2	2
Switch Phase	4	4	1	6	2	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Spilt (s)	22.0	22.0	10.0	22.0	22.0	22.0
Total Spilt (s)	40.0	40.0	15.0	40.0	25.0	25.0
Total Spilt (%)	50.0%	50.0%	18.8%	50.0%	31.3%	31.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	None	None	None	None
v/c Ratio	0.81	0.22	0.62	0.61	0.80	0.83
Control Delay	16.3	0.7	24.7	22.7	45.7	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.3	0.7	24.7	22.7	45.7	11.6
Queue Length 50th (ft)	108	0	62	168	149	4
Queue Length 95th (ft)	#490	0	109	256	#262	46
Internal Link Dist (ft)	1155		596	714		
Turn Bay Length (ft)	177					
Base Capacity (vph)	794	809	324	791	442	976
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.22	0.61	0.58	0.73	0.82

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 62 (78%), Referenced to phase 4EBL Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	592	162	189	407	297	646
Future Volume (vph)	592	162	189	407	297	646
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.23	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	433	1863	1863	1583
Peak-hour factor, PHF	0.92	0.90	0.95	0.89	0.92	0.81
Adj. Flow (vph)	643	180	199	457	323	798
RTOR Reduction (vph)	0	99	0	0	0	617
Lane Group Flow (vph)	643	81	199	457	323	181
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	35.9	35.9	32.1	32.1	17.3	17.3
Effective Green, g (s)	35.9	35.9	32.1	32.1	17.3	17.3
Actuated g/c Ratio	0.45	0.45	0.40	0.40	0.22	0.22
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	5.0	5.0	5.0
Lane Grp Cap (vph)	794	710	320	747	402	342
v/s Ratio Prot	c0.36		0.07	c0.25	c0.17	
v/c Ratio Perm		0.05	0.18			0.11
v/c Ratio	0.81	0.11	0.62	0.61	0.80	0.53
Uniform Delay, d1	19.1	12.8	17.6	19.0	29.7	27.7
Progression Factor	0.34	0.04	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.7	0.3	2.1	12.5	2.8	2.8
Delay (s)	14.2	0.8	21.3	21.2	42.2	30.6
Level of Service	B	A	C	C	D	C
Approach Delay (s)	11.3		21.2	33.9		
Approach LOS	B		C	C		

Intersection Summary

HCM 2000 Control Delay

HCM 2000 Volume to Capacity ratio

Actuated Cycle Length (s)

Intersection Capacity Utilization

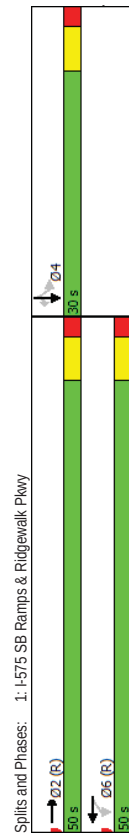
Analysis Period (min)

c Critical Lane Group

Queues
1: I-575 SB Ramps & Ridgewalk Pkwy

No-Build SAT
1/20/2016

Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Configurations	96	723	151	3	22
Traffic Volume (vph)	96	723	151	3	22
Future Volume (vph)	96	723	151	3	22
Lane Group Flow (vph)	286	745	188	414	44
Turn Type	NA	Perm	NA	NA	Perm
Protected Phases	2	6	4	4	4
Permitted Phases	2	6	6	4	4
Detector Phase	2	6	6	4	4
Switch Phase	2	6	6	4	4
Minimum Initial (s)	15.0	15.0	15.0	6.0	6.0
Minimum Split (s)	21.3	22.0	22.0	13.0	13.0
Total Split (s)	50.0	50.0	50.0	30.0	30.0
Total Split (%)	62.5%	62.5%	62.5%	37.5%	37.5%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	C-Max	C-Max	C-Max	None	None
v/c Ratio	0.28	1.21	0.16	0.86	0.09
Control Delay	5.2	128.4	7.1	45.9	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	5.2	128.4	7.1	45.9	7.2
Queue Length 50th (ft)	31	~470	46	189	0
Queue Length 95th (ft)	61	#707	60	98	5
Internal Link Dist (ft)	563	559	412		
Turn Bay Length (ft)					
Base Capacity (vph)	1040	618	1061	525	500
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.28	1.21	0.16	0.79	0.09
Intersection Summary					
Cycle Length: 80					
Actuated Cycle Length: 80					
Offset: 60 (75%), Referenced to phase 2 EBT and 6 WBT, Start of Green					
Natural Cycle: 140					
Control Type: Actuated-Coordinated					
Volume exceeds capacity, queue is theoretically infinite.					
Queue shown is maximum after two cycles.					
# 95th percentile volume exceeds capacity, queue may be longer.					
Queue shown is maximum after two cycles.					



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HCM Signalized Intersection Capacity Analysis
1: I-575 SB Ramps & Ridgewalk Pkwy

No-Build SAT
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		96	110	723	151	0	0	0	0	333	3	22
Traffic Volume (vph)	0	96	110	723	151	0	0	0	0	333	3	22
Future Volume (vph)	0	96	110	723	151	0	0	0	0	333	3	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1712	1770	1863	1770	1863	1770	1863	1770	1863	1770	1863	1770
Flt Permitted	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1712	1712	1863	1712	1863	1712	1863	1712	1863	1712	1863	1712
Peak-hour factor, PHF	0.92	0.84	0.64	0.97	0.90	0.92	0.92	0.92	0.92	0.82	0.38	0.50
Adj. Flow (vph)	0	114	172	745	168	0	0	0	0	406	8	44
RTOR Reduction (vph)	0	65	0	0	0	0	0	0	0	0	0	32
Lane Group Flow (vph)	0	222	0	745	168	0	0	0	0	0	0	414
Turn Type	NA	NA	Perm	NA	NA	Perm	NA	NA	Perm	NA	Perm	NA
Protected Phases	2	2	6	6	6	6	6	6	6	6	6	6
Permitted Phases	2	2	6	6	6	6	6	6	6	6	6	6
Actuated Green, G (s)	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6
Effective Green, g (s)	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6
Actuated g/c Ratio	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	975	617	1061	617	1061	617	1061	617	1061	617	1061	617
v/s Ratio Prot	0.13	0.13	0.09	0.13	0.09	0.13	0.09	0.13	0.09	0.13	0.09	0.13
v/c Ratio	0.23	1.21	0.16	0.23	0.16	0.23	0.16	0.23	0.16	0.23	0.16	0.23
Uniform Delay, d1	8.5	17.2	8.1	8.5	17.2	8.1	8.5	17.2	8.1	8.5	17.2	8.1
Progression Factor	1.00	0.98	0.77	1.00	0.98	0.77	1.00	0.98	0.77	1.00	0.98	0.77
Incremental Delay, d2	0.5	107.5	0.3	0.5	107.5	0.3	0.5	107.5	0.3	0.5	107.5	0.3
Delay (s)	9.0	124.4	6.5	9.0	124.4	6.5	9.0	124.4	6.5	9.0	124.4	6.5
Level of Service	A	F	A	A	F	A	A	F	A	A	F	A
Approach Delay (s)	9.0	102.7	6.5	9.0	102.7	6.5	9.0	102.7	6.5	9.0	102.7	6.5
Approach LOS	A	F	A	A	F	A	A	F	A	A	F	A
Intersection Summary												
HCM 2000 Control Delay	69.1	109	69.1	69.1	109	69.1	69.1	109	69.1	69.1	109	69.1
HCM 2000 Volume to Capacity ratio	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Actuated Cycle Length (s)	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
Intersection Capacity Utilization	69.4%	69.4%	69.4%	69.4%	69.4%	69.4%	69.4%	69.4%	69.4%	69.4%	69.4%	69.4%
Analysis Period (min)	15	15	15	15	15	15	15	15	15	15	15	15
c Critical Lane Group												

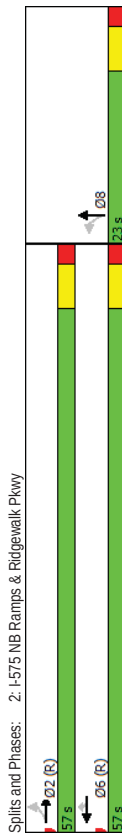
Baseline

Synchro 9 Report
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Queues
2: I-575 NB Ramps & Ridgewalk Pkwy

No-Build SAT
1/20/2016

	EBL	EBT	WBT	WBR	NBT	NBR	
Lane Group	EBL	EBT	WBT	WBR	NBT	NBR	
Lane Configurations	EBL	EBT	WBT	WBR	NBT	NBR	
Traffic Volume (vph)	28	405	814	277	0	874	
Future Volume (vph)	28	405	814	277	0	874	
Ideal Flow (vphpl)	41	431	895	318	93	971	
Turn Type	Perm	NA	NA	Perm	NA	Free	
Protected Phases	2	2	6	6	8	Free	
Permitted Phases	2	2	6	6	8	Free	
Detector Phase	2	2	6	6	8	Free	
Switch Phase	2	2	6	6	8	Free	
Minimum Initial (s)	15.0	15.0	6.0	6.0	5.7		
Minimum Split (s)	22.0	22.0	22.0	22.0	12.0		
Total Split (s)	57.0	57.0	57.0	57.0	23.0		
Total Split (%)	71.3%	71.3%	71.3%	71.3%	28.8%		
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3		
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	None	
v/c Ratio	0.09	0.30	0.33	0.25	0.44	0.61	
Control Delay	1.1	1.1	4.0	1.3	38.6	1.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	1.1	1.1	4.0	1.3	38.6	1.8	
Queue Length 50th (ft)	1	11	56	7	44	0	
Queue Length 95th (ft)	m2	m18	m115	m20	84	0	
Internal Link Dist (ft)	559	534			615		
Turn Bay Length (ft)	420		225				
Base Capacity (vph)	447	1434	2724	1291	369	1583	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.09	0.30	0.33	0.25	0.25	0.61	
Intersection Summary							
Cycle Length: 80							
Actuated Cycle Length: 80							
Offset: 42 (53%), Referenced to phase 2EBTL and 6:WBT, Start of Green							
Natural Cycle: 40							
Control Type: Actuated-Coordinated							
m Volume for 95th percentile queue is metered by upstream signal.							



Baseline
Synchro 9 Report
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HCM Signalized Intersection Capacity Analysis
2: I-575 NB Ramps & Ridgewalk Pkwy

No-Build SAT
1/20/2016

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	28	405	0	0	814	277	81	0	874	0	0	0
Future Volume (vph)	28	405	0	0	814	277	81	0	874	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3			6.3	6.3			6.3			
Lane Util. Factor	1.00	1.00			0.95	1.00			1.00			
Flt Protected	0.95	1.00			1.00	1.00			0.95			
Satd. Flow (prot)	1770	1863			3539	1863			1770			
Flt Permitted	0.31	1.00			1.00	1.00			0.95			
Satd. Flow (perm)	581	1863			3539	1863			1770			
Peak-hour factor, PHF	0.69	0.94	0.92	0.92	0.91	0.87	0.87	0.92	0.90	0.92	0.92	0.92
Adj. Flow (vph)	41	431	0	0	895	318	93	0	971	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	83	0	0	0	0	0	0
Lane Group Flow (vph)	41	431	0	0	895	235	0	93	971	0	0	0
Turn Type	Perm	NA			NA	Perm	Perm	NA	Free			
Protected Phases	2				6			8				
Permitted Phases	2				6			8				
Actuated Green, G (s)	59.1	59.1			59.1	59.1		8.3	80.0			
Effective Green, g (s)	59.1	59.1			59.1	59.1		8.3	80.0			
Actuated g/c Ratio	0.74	0.74			0.74	0.74		0.10	1.00			
Clearance Time (s)	6.3	6.3			6.3	6.3		6.3	6.3			
Vehicle Extension (s)	5.0	5.0			5.0	5.0		3.0				
Lane Grp Cap (vph)	429	1376			2614	1169		183	1583			
v/s Ratio Prot	0.23				0.25			0.05	0.61			
v/c Ratio Perm	0.10	0.31			0.34	0.20		0.51	0.61			
Uniform Delay, d1	2.9	3.6			3.7	3.2		33.9	0.0			
Progression Factor	0.20	0.17			0.93	1.81		1.00	1.00			
Incremental Delay, d2	0.3	0.4			0.2	0.2		2.2	1.8			
Delay (s)	0.9	1.0			3.6	6.0		36.1	1.8			
Level of Service	A	A			A	A		D	A			
Approach Delay (s)	1.0				4.2			4.8				
Approach LOS	A				A			A				
Intersection Summary												
HCM 2000 Control Delay					3.9							
HCM 2000 Volume to Capacity ratio					0.73							
Actuated Cycle Length (s)					80.0							
Intersection Capacity Utilization					69.4%							
Analysis Period (min)					15							
c Critical Lane Group												

Baseline
Synchro 9 Report
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Queues

3. Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

No-Build SAT
1/20/2016

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	98	410	775	155	435	523	36	49	17
Traffic Volume (vph)	98	410	775	155	435	523	36	49	17
Future Volume (vph)	98	410	775	155	435	523	36	49	17
Lane Group Flow (vph)	114	919	420	221	549	608	247	67	186
Turn Type	pm-pt	NA	Perm	pm-pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	2	1	6	8	8	4	4
Permitted Phases	2	2	2	6	8	8	8	4	4
Detector Phase	5	2	2	1	6	8	8	4	4
Switch Phase	5	2	2	1	6	8	8	4	4
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Minimum Split (%)	11.0	28.0	28.0	15.0	32.0	37.0	37.0	37.0	37.0
Total Split (%)	13.8%	35.0%	35.0%	18.8%	40.0%	46.3%	46.3%	46.3%	46.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	None	C-Max	C-Max	None	C-Max	None	None	None	None
Recall Mode	0.34	0.90	0.60	0.77	0.44	1.32	0.33	0.16	0.26
v/c Ratio	13.4	29.7	4.6	36.5	17.3	183.6	5.8	17.4	4.9
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	13.4	29.7	4.6	36.5	17.3	183.6	5.8	17.4	4.9
Total Delay	23	201	7	84	103	-398	16	21	7
Queue Length 50th (ft)	441	210	35	110	128	#555	30	39	28
Queue Length 95th (ft)	534	275	410	268	686	232	201	281	281
Internal Link Dist (ft)	340	1024	701	289	1238	461	756	412	727
Turn Bay Length (ft)	0	0	0	0	0	0	0	0	0
Base Capacity (vph)	0	0	0	0	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.90	0.60	0.76	0.44	1.32	0.33	0.16	0.26

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 63 (79%), Referenced to phase 2EBTL and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



HCM Signalized Intersection Capacity Analysis

3. Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

No-Build SAT
1/20/2016

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	98	410	775	155	435	523	36	49	17
Traffic Volume (vph)	98	410	775	155	435	523	36	49	17
Future Volume (vph)	98	410	775	155	435	523	36	49	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	1.00	1.00
Fit	1.00	0.94	0.85	1.00	0.98	1.00	0.88	1.00	0.87
Fit Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1770	3176	1441	1770	3475	1770	1642	1770	1618
Fit Permitted	0.45	1.00	1.00	0.15	1.00	0.64	1.00	0.57	1.00
Satd. Flow (perm)	832	3176	1441	276	3475	1193	1642	1063	1618
Peak-hour factor, PHF	0.86	0.77	0.96	0.70	0.90	0.83	0.86	0.92	0.73
Adj. Flow (vph)	114	532	807	221	483	66	68	52	195
RTOR Reduction (vph)	0	148	304	0	13	0	0	119	0
Lane Group Flow (vph)	114	771	116	221	536	0	608	128	0
Turn Type	pm-pt	NA	Perm	pm-pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	2	1	6	8	8	4	4
Permitted Phases	2	2	2	6	8	8	8	4	4
Actuated Green, G (s)	26.1	22.1	22.1	35.9	27.0	31.0	31.0	31.0	31.0
Effective Green, g (s)	26.1	22.1	22.1	35.9	27.0	31.0	31.0	31.0	31.0
Actuated G/C Ratio	0.33	0.28	0.28	0.45	0.34	0.39	0.39	0.39	0.39
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	318	877	398	290	1172	462	636	411	626
v/s Ratio Prot	0.02	c0.24	0.08	c0.08	0.15	c0.51	0.08	0.06	0.05
v/s Ratio Perm	0.10	0.88	0.29	0.76	0.46	1.32	0.20	0.16	0.14
Uniform Delay, d1	19.4	27.7	22.8	17.3	20.8	24.5	16.3	16.0	15.9
Progression Factor	0.81	0.81	0.45	1.15	0.80	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	11.0	1.6	11.0	1.3	156.9	0.2	0.2	0.1
Delay (s)	16.3	33.3	12.0	31.0	17.9	181.4	16.4	16.2	16.0
Level of Service	B	C	B	C	B	F	B	B	B
Approach Delay (s)	25.8	C	C	21.7	C	133.7	F	16.0	B
Approach LOS	C	C	C	C	C	F	F	B	B

Intersection Summary
HCM 2000 Control Delay
HCM 2000 Volume to Capacity ratio
Actuated Cycle Length (s)
Intersection Capacity Utilization
Analysis Period (min)
c Critical Lane Group

Queues
4: Woodstock Pkwy/Meridian Dr & Ridgewalk Pkwy

No-Build SAT
1/20/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	12	587	55	149	641	53	2	7	2
Traffic Volume (vph)	12	587	55	149	641	53	2	7	2
Future Volume (vph)	12	587	55	149	641	53	2	7	2
Lane Group Flow (vph)	17	691	75	164	708	62	126	0	22
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	1	6	8	8	4	4
Permitted Phases	2	2	2	2	2	1	6	8	4
Detector Phase	2	2	2	2	2	1	6	8	4
Switch Phase	2	2	2	2	2	1	6	8	4
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	6.4	6.4	6.0	6.0
Minimum Split (s)	22.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Minimum Split (%)	40.0	40.0	40.0	15.0	55.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%	50.0%	18.8%	68.8%	31.3%	31.3%	31.3%	31.3%
Yellow Time (s)	4.3	4.3	4.3	3.6	4.3	3.6	3.6	3.6	3.6
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.04	0.33	0.08	0.28	0.26	0.39	0.44	0.13	0.13
Control Delay	4.0	4.1	0.1	5.9	3.4	39.1	12.6	24.1	24.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.0	4.1	0.1	5.9	3.4	39.1	12.6	24.1	24.1
Queue Length 50th (ft)	1	33	0	13	33	29	4	6	6
Queue Length 95th (ft)	m3	m38	m0	58	81	60	0	12	12
Internal Link Dist (ft)	666			555		531		144	
Turn Bay Length (ft)	110	110	90			187			
Base Capacity (vph)	426	2118	992	613	2763	335	477	355	355
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.33	0.08	0.27	0.26	0.19	0.26	0.06	0.06

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 5 (6%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
m Volume for 95th percentile queue is metered by upstream signal.	



HCM Signalized Intersection Capacity Analysis
4: Woodstock Pkwy/Meridian Dr & Ridgewalk Pkwy

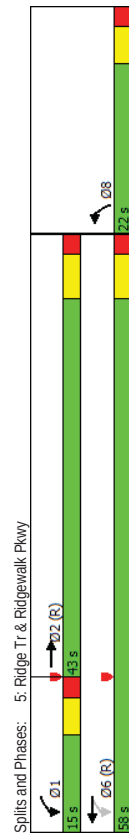
No-Build SAT
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	12	587	55	149	641	53	2	109	7
Traffic Volume (vph)	12	587	55	149	641	53	2	109	7
Future Volume (vph)	12	587	55	149	641	53	2	109	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
No. Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Flt	1.00	1.00	0.85	1.00	1.00	1.00	0.86	1.00	0.94
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.98	0.98
Satd. Flow (prot)	1770	3539	1583	1770	3536	1770	1601	1725	1725
Flt Permitted	0.38	1.00	1.00	0.33	1.00	0.74	1.00	0.82	0.82
Satd. Flow (perm)	712	3539	1583	617	3536	1384	1601	1437	1437
Peak-hour factor, PHF	0.69	0.85	0.73	0.91	0.91	0.25	0.86	0.25	0.92
Adj. Flow (vph)	17	691	75	164	704	4	62	8	118
RTOR Reduction (vph)	0	0	31	0	0	0	106	0	0
Lane Group Flow (vph)	17	691	44	164	708	0	62	20	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	1	6	8	8	4	4
Permitted Phases	2	2	2	2	2	1	6	8	4
Actuated Green, G (s)	46.7	46.7	46.7	60.1	60.1	8.0	8.0	8.0	8.0
Effective Green, g (s)	46.7	46.7	46.7	60.1	60.1	8.0	8.0	8.0	8.0
Actuated g/c Ratio	0.58	0.58	0.58	0.75	0.75	0.10	0.10	0.10	0.10
Clearance Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Vehicle Extension (s)	5.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	415	2065	924	575	2656	138	160	143	143
v/s Ratio Prot	0.02	0.03	0.03	0.19	0.20	0.03	0.01	0.01	0.01
v/c Ratio	0.04	0.33	0.05	0.29	0.27	0.45	0.12	0.10	0.10
Uniform Delay, d1	7.1	8.6	7.1	3.2	3.1	33.9	32.8	32.7	32.7
Progression Factor	0.41	0.40	0.00	1.51	0.93	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.3	0.1	0.3	0.2	2.3	0.3	0.3	0.3
Delay (s)	3.0	3.8	0.1	5.1	3.1	36.2	33.2	33.0	33.0
Level of Service	A	A	A	A	A	D	C	C	C
Approach Delay (s)	3.4	3.4	3.5	3.5	3.4	34.2	33.0	33.0	33.0
Approach LOS	A	A	A	A	A	C	C	C	C

Intersection Summary	
HCM 2000 Control Delay	6.9
HCM 2000 Volume to Capacity ratio	0.35
Actuated Cycle Length (s)	80.0
Intersection Capacity Utilization	52.7%
Analysis Period (min)	15
c Critical Lane Group	

Lane Group	EBT	WBL	WBT	NBL
Lane Configurations	↑↑	↑	↑↑	↑
Traffic Volume (vph)	565	52	649	132
Future Volume (vph)	565	52	649	132
Lane Group Flow (vph)	811	88	738	219
Turn Type	NA	pm+pt	NA	Prot
Protected Phases	2	1	6	8
Permitted Phases	6			
Detector Phase	2	1	6	8
Switch Phase				
Minimum Initial (s)	15.0	5.0	15.0	6.0
Minimum Split (s)	22.0	11.0	22.0	12.0
Total Split (s)	43.0	15.0	58.0	22.0
Total Split (%)	53.8%	18.8%	72.5%	27.5%
Yellow Time (s)	4.3	3.6	4.3	3.6
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	5.6	6.3	5.6
Lead/Lag	Lag	Lead		
Lead-Lag Optimize?				
Recall Mode	C-Max	None	C-Max	None
v/c Ratio	0.42	0.19	0.31	0.70
Control Delay	3.3	5.5	6.4	40.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.3	5.5	6.4	40.9
Queue Length 50th (ft)	15	15	78	94
Queue Length 95th (ft)	36	17	100	137
Internal Link Dist (ft)	483		884	282
Turn Bay Length (ft)	100			
Base Capacity (vph)	1910	493	2408	370
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.42	0.18	0.31	0.59

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 19 (24%), Referenced to phase 2EBT and 6WBTL, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Volume (vph)	565	146	52	649	132	36
Future Volume (vph)	565	146	52	649	132	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	5.6	6.3	5.6	5.6	5.6
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00
Flt	0.96	1.00	1.00	0.95	1.00	0.97
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	3406		1770	3539	1737	
Flt Permitted	1.00		0.27	1.00	0.96	
Satd. Flow (perm)	3406		500	3539	1737	
Peak-hour factor, PHF	0.93	0.72	0.59	0.88	0.79	0.69
Adj. Flow (vph)	608	203	88	738	167	52
RTOR Reduction (vph)	35	0	0	0	15	0
Lane Group Flow (vph)	776	0	88	738	204	0
Turn Type	NA		pm+pt	NA	Prot	
Protected Phases	2		1	6	8	
Permitted Phases			6			
Actuated Green, G (s)	42.9		54.4	54.4	13.7	
Effective Green, g (s)	42.9		54.4	54.4	13.7	
Actuated g/C Ratio	0.54		0.68	0.68	0.17	
Clearance Time (s)	6.3		5.6	6.3	5.6	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1826		433	2406	297	
v/s Ratio Prot	c0.23		0.01	c0.21	c0.12	
v/c Ratio Perm			0.12			
v/c Ratio	0.43		0.20	0.31	0.69	
Uniform Delay, d1	11.1		5.2	5.2	31.1	
Progression Factor	0.24		1.00	1.11	1.00	
Incremental Delay, d2	0.7		0.2	0.3	6.5	
Delay (s)	3.4		5.3	6.0	37.6	
Level of Service	A		A	A	D	
Approach Delay (s)	3.4		5.9	37.6		
Approach LOS	A		A	D		

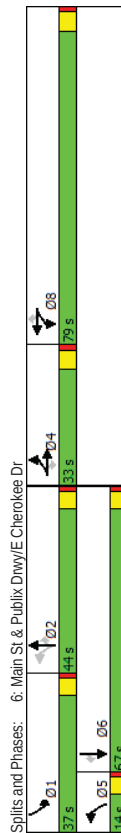
Intersection Summary	
HCM 2000 Control Delay	8.6
HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49
Actuated Cycle Length (s)	80.0
Sum of lost time (s)	17.5
Intersection Capacity Utilization	48.5%
ICU Level of Service	A
Analysis Period (min)	15
c Critical Lane Group	

Queues
6: Main St & Publix Drwy/E Cherokee Dr

No-Build SAT
1/20/2016

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4
Traffic Volume (vph)	59	59	428	62	269	76	241	340	315	256
Future Volume (vph)	59	59	428	62	269	76	241	340	315	256
Lane Group Flow (vph)	142	94	279	279	282	84	280	362	354	278
Turn Type	NA	Perm	Split	NA	Perm	pm+pt	NA	Prot	NA	Perm
Protected Phases	4	4	8	8	5	2	2	2	1	6
Permitted Phases	4	4	8	8	5	2	2	2	1	6
Detector Phase	4	4	8	8	8	5	2	2	1	6
Switch Phase	4	4	8	8	8	5	2	2	1	6
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	27.5	27.5	27.5	27.5	14.0	26.0	26.0	14.0	32.0	32.0
Total Split (s)	33.0	33.0	79.0	79.0	79.0	14.0	44.0	44.0	37.0	67.0
Total Split (%)	17.1%	17.1%	40.9%	40.9%	7.3%	22.8%	22.8%	19.2%	34.7%	34.7%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.0	1.5	1.5	1.0	1.5	1.5
All-Red Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag					Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					None	None	Min	None	Min	Min
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
v/c Ratio	0.55	0.30	0.66	0.65	0.47	0.22	0.70	0.60	0.61	0.50
Control Delay	55.9	10.4	46.6	45.9	7.0	23.0	52.0	11.2	49.2	35.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Length	55.9	10.4	46.6	45.9	7.0	23.0	52.0	11.2	49.2	35.5
Queue Length 50th (ft)	88	0	172	171	0	32	173	17	111	152
Queue Length 95th (ft)	186	3	357	247	73	81	329	121	219	291
Internal Link Dist (ft)	33		935			546			494	
Turn Bay Length (ft)			650		300	100		255	330	120
Base Capacity (vph)	486	500	1215	1238	1225	398	710	808	1087	1134
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.19	0.23	0.23	0.24	0.21	0.39	0.45	0.33	0.25

Intersection Summary										
Cycle Length: 133										
Actuated Cycle Length: 107.4										
Natural Cycle: 105										
Control Type: Actuated-Uncoordinated										



HCM Signalized Intersection Capacity Analysis
6: Main St & Publix Drwy/E Cherokee Dr

No-Build SAT
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4	4
Traffic Volume (vph)	52	59	59	428	62	269	76	241	340	315	256
Future Volume (vph)	52	59	59	428	62	269	76	241	340	315	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	5.5	5.5	5.5	5.0	5.5	5.5
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Flt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.98	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1817	1583	1681	1713	1583	1770	1863	1583	3433	1863	1583
Flt Permitted	0.98	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1817	1583	1681	1713	1583	1097	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.73	0.83	0.63	0.92	0.67	0.92	0.91	0.86	0.94	0.88	0.92
Adj. Flow (vph)	71	71	94	465	93	292	84	280	362	354	278
RTOR Reduction (vph)	0	0	80	0	0	218	0	0	259	0	0
Lane Group Flow (vph)	0	142	14	279	279	74	84	280	103	354	278
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	Perm	Prot	NA
Protected Phases	4	4	4	8	8	5	2	2	1	6	6
Permitted Phases	4	4	4	8	8	5	2	2	1	6	6
Actuated Green, G (s)	15.3	15.3	27.0	27.0	27.0	32.1	23.0	23.0	18.2	32.1	32.1
Effective Green, g (s)	15.3	15.3	27.0	27.0	27.0	32.1	23.0	23.0	18.2	32.1	32.1
Actuated G/C Ratio	0.14	0.14	0.25	0.25	0.25	0.30	0.22	0.22	0.17	0.30	0.30
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	262	228	428	436	403	389	404	343	589	564	479
v/s Ratio Prot	c0.08			c0.17	0.16	0.02	c0.15		c0.10	0.15	
v/s Ratio Perm			0.01		0.05	0.05		0.06			0.01
v/c Ratio	0.54	0.06	0.65	0.64	0.18	0.22	0.69	0.30	0.60	0.49	0.02
Uniform Delay, d1	42.1	39.1	35.3	35.2	30.9	27.0	38.2	34.8	40.5	30.3	25.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.1	3.5	3.1	0.2	0.3	6.4	1.0	1.7	1.4	0.0
Delay (s)	44.4	39.3	38.8	38.3	31.1	27.3	44.7	35.8	42.3	31.7	25.9
Level of Service	D	D	D	D	C	C	D	D	D	C	C
Approach Delay (s)	42.3			36.0						37.1	
Approach LOS	D			D			D			D	

Intersection Summary										
HCM 2000 Control Delay										
HCM 2000 Volume to Capacity ratio										
Actuated Cycle Length (s)										
Intersection Capacity Utilization										
Analysis Period (min)										
c Critical Lane Group										

HCM Unsignalized Intersection Capacity Analysis
7: Main St & Rope Mill Rd/E Main St

No-Build SAT
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	0	110	19	2	0	81	339	18	1	444	15
Future Volume (Veh/h)	8	0	110	19	2	0	81	339	18	1	444	15
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
Grade	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.58	0.25	0.81	0.47	0.50	0.92	0.55	0.85	0.57	0.25	0.92	0.70
Hourly flow rate (vph)	14	0	136	40	4	0	147	399	32	4	483	21
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage (veh)												
Upstream signal (ft)												
pX platoon unblocked												
VC, conflicting volume	1212	1226	494	1346	1221	415	504					431
VC1, stage 1 conf vol												
VC2, stage 2 conf vol												
VCU, unblocked vol	1212	1226	494	1346	1221	415	504					431
IC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1					4.1
IC, 2 stage (s)												
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2					2.2
p0 queue free %	90	100	76	54	97	100	86					100
CM capacity (veh/h)	139	153	576	87	154	637	1061					1129
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	150	44	578	508								
Volume Left	14	40	147	4								
Volume Right	136	0	32	21								
cSH	445	91	1061	1129								
Volume to Capacity	0.34	0.48	0.14	0.00								
Queue Length 95th (ft)	37	52	12	0								
Control Delay (s)	17.2	77.1	3.5	0.1								
Lane LOS	C	F	A	A								
Approach Delay (s)	17.2	77.1	3.5	0.1								
Approach LOS	C	F										
Intersection Summary												
Average Delay												6.3
Intersection Capacity Utilization												65.6%
Analysis Period (min)												15
												ICU Level of Service
												C

Baseline

Synchro 9 Report
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HCM Unsignalized Intersection Capacity Analysis
8: Woodstock Pkwy & Outlet Shopping Drwy/Rope Mill Rd

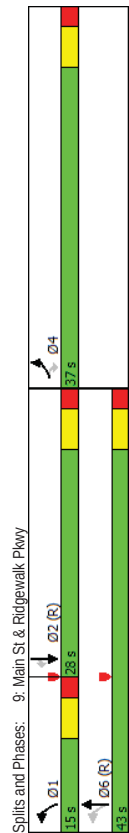
No-Build SAT
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	52	49	100	18	31	39	107	77	30	32	33	18
Future Volume (veh/h)	52	49	100	18	31	39	107	77	30	32	33	18
Peak Hour Factor	0.59	0.50	0.81	0.80	0.78	0.73	0.84	0.83	0.68	0.81	0.75	0.57
Hourly flow rate (vph)	88	98	123	23	40	53	127	93	44	40	44	32
Approach Volume (veh/h)			309		116			264				116
Crossing Volume (veh/h)			107		308			226				190
High Capacity (veh/h)			1274		1087			1160				1193
High v/c (veh/h)			0.24		0.11			0.23				0.10
Low Capacity (veh/h)			1060		892			957				988
Low v/c (veh/h)			0.29		0.13			0.28				0.12
Intersection Summary												
Maximum v/c High								0.24				
Maximum v/c Low								0.29				
Intersection Capacity Utilization								40.7%				A
								ICU Level of Service				

Baseline

Synchro 9 Report
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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	475	116	116	245	335	577
Future Volume (vph)	475	116	116	245	335	577
Lane Group Flow (vph)	546	145	132	272	376	656
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4	4	1	6	2	2
Permitted Phases	4	4	1	6	2	2
Detector Phase	4	4	1	6	2	2
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	10.0	22.0	22.0	22.0
Total Split (s)	37.0	37.0	15.0	43.0	28.0	28.0
Total Split (%)	46.3%	46.3%	18.8%	53.8%	35.0%	35.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Recall Mode	None	None	None	C-Max	C-Max	C-Max
v/c Ratio	0.87	0.22	0.32	0.29	0.58	0.70
Control Delay	29.0	1.8	14.3	13.8	28.6	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	1.8	14.3	13.8	28.6	8.9
Queue Length 50th (ft)	247	0	36	82	170	27
Queue Length 95th (ft)	4346	0	67	135	273	131
Internal Link Dist (ft)	1155			596	714	
Turn Bay Length (ft)			177			110
Base Capacity (vph)	685	702	419	923	650	933
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.21	0.32	0.29	0.58	0.70



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	475	116	116	245	335	577
Future Volume (vph)	475	116	116	245	335	577
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Flt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583
Peak-hour factor, PHF	0.87	0.80	0.88	0.90	0.89	0.88
Adj. Flow (vph)	546	145	132	272	376	656
RTOR Reduction (vph)	0	94	0	0	0	389
Lane Group Flow (vph)	546	51	132	272	376	267
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6		2	
Actuated Green, G (s)	28.3	28.3	39.7	39.7	26.8	26.8
Effective Green, g (s)	28.3	28.3	39.7	39.7	26.8	26.8
Actuated g/c Ratio	0.35	0.35	0.50	0.50	0.34	0.34
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	5.0	5.0	5.0
Lane Grp Cap (vph)	626	559	387	924	624	530
v/s Ratio Prot	0.31		0.03	0.15	0.20	
v/c Ratio	0.87	0.09	0.34	0.29	0.60	0.50
Uniform Delay, d1	24.2	17.3	12.4	11.9	22.2	21.3
Progression Factor	0.57	0.34	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.9	0.1	0.5	0.8	4.3	3.4
Delay (s)	25.6	6.0	12.9	12.7	26.4	24.7
Level of Service	C	A	B	B	C	C
Approach Delay (s)	21.5		12.8	25.3		
Approach LOS	C		B	C		

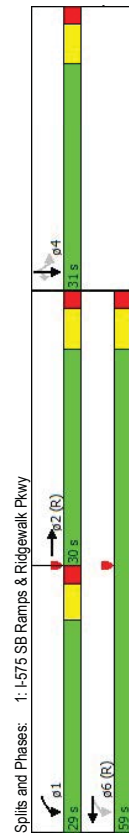
Intersection Summary		
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.71	
Actuated Cycle Length (s)	80.0	Sum of lost time (s)
Intersection Capacity Utilization	65.4%	ICU Level of Service
Analysis Period (min)	15	
c Critical Lane Group		

Future “No-Build” Intersection Analysis With Improvements

Queues
1: I-575 SB Ramps & Ridgeway Pkwy

No-Build AM Improved
1/20/2016

	EBT	WBL	WBT	SBT	SBR
Lane Group					
Lane Configurations	176	454	93	3	26
Traffic Volume (vph)	176	454	93	3	26
Future Volume (vph)	176	454	93	3	26
Lane Group Flow (vph)	447	540	129	469	43
Turn Type	NA	pm+pt	NA	NA	Perm
Protected Phases	2	1	6	4	4
Permitted Phases	6				
Detector Phase	2	1	6	4	4
Switch Phase					
Minimum Initial (s)	15.0	5.0	15.0	6.0	6.0
Minimum Split (s)	21.3	11.0	22.0	13.0	13.0
Total Split (s)	30.0	29.0	59.0	31.0	31.0
Total Split (%)	33.3%	32.2%	65.6%	34.4%	34.4%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.3
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.0	6.3	6.3	6.3
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?					
Recall Mode	C-Max	None	C-Max	None	None
v/c Ratio	0.91	1.01	0.12	0.96	0.08
Control Delay	53.4	60.4	7.6	66.7	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	53.4	60.4	7.6	66.7	0.3
Queue Length 50th (ft)	224	~282	21	263	0
Queue Length 95th (ft)	248	#386	35	128	0
Internal Link Dist (ft)	563		559	412	
Turn Bay Length (ft)					
Base Capacity (vph)	493	537	1090	487	516
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.91	1.01	0.12	0.96	0.08
Intersection Summary					
Cycle Length: 90					
Actuated Cycle Length: 90					
Offset: 43 (48%), Referenced to phase 2 EBT and 6: WBT L Start of Green					
Natural Cycle: 90					
Control Type: Actuated-Coordinated					
Volume exceeds capacity, queue is theoretically infinite.					
Queue shown is maximum after two cycles.					
# 95th percentile volume exceeds capacity, queue may be longer.					
Queue shown is maximum after two cycles.					



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HCM Signalized Intersection Capacity Analysis
1: I-575 SB Ramps & Ridgeway Pkwy

No-Build AM Improved
1/20/2016

	EBT	EBT	EBT	WBL	WBT	WBL	WBT	NBL	NBT	NBL	NBT	SBL	SBT	SBL	SBT	SBR
Movement																
Lane Configurations	0	176	152	454	93	0	0	0	0	0	0	0	392	3	26	26
Traffic Volume (vph)	0	176	152	454	93	0	0	0	0	0	0	0	392	3	26	26
Future Volume (vph)	0	176	152	454	93	0	0	0	0	0	0	0	392	3	26	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1749	1770	1863	1770	1863	1770	1863	1770	1863	1770	1863	1770	1863	1770	1863	1770
Flt Permitted	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1749	1770	1863	1770	1863	1770	1863	1770	1863	1770	1863	1770	1863	1770	1863	1770
Peak-hour factor, PHF	0.92	0.72	0.75	0.84	0.72	0.92	0.92	0.92	0.92	0.92	0.92	0.85	0.38	0.85	0.38	0.85
Adj. Flow (vph)	0	244	203	540	129	0	0	0	0	0	0	0	461	8	43	43
RTOR Reduction (vph)	0	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	414	0	540	129	0	0	0	0	0	0	0	0	0	0	0
Turn Type	NA	NA	pm+pt	NA	NA	pm+pt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Protected Phases	2			6			6					4				4
Permitted Phases																
Actuated Green, G (s)	23.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	24.7	24.7	24.7	24.7	24.7
Effective Green, g (s)	23.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	24.7	24.7	24.7	24.7	24.7
Actuated g/C Ratio	0.26	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.27	0.27	0.27	0.27	0.27
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0	3.0	3.0	5.0	3.0	3.0	3.0	5.0	3.0
Lane Grp Cap (vph)	460	536	1090	536	1090	536	1090	536	1090	536	1090	487	487	487	487	487
v/s Ratio Prot	0.24	c0.26	0.07	c0.33	c0.33	c0.33	c0.33	c0.33	c0.33	c0.33	c0.33	0.26	0.01	0.26	0.01	0.01
v/s Ratio Perm	0.90	1.01	0.12	1.01	0.12	1.01	0.12	1.01	0.12	1.01	0.12	0.96	0.03	0.96	0.03	0.03
Uniform Delay, d1	32.0	25.2	8.3	25.2	8.3	25.2	8.3	25.2	8.3	25.2	8.3	32.2	23.9	32.2	23.9	23.9
Progression Factor	1.00	0.74	0.87	0.74	0.87	0.74	0.87	0.74	0.87	0.74	0.87	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.2	40.5	0.2	23.2	40.5	0.2	23.2	40.5	0.2	23.2	40.5	31.3	0.0	31.3	0.0	0.0
Delay (s)	55.2	59.1	7.5	59.1	7.5	59.1	7.5	59.1	7.5	59.1	7.5	63.5	23.9	63.5	23.9	23.9
Level of Service	E	E	A	E	A	E	A	E	A	E	A	E	E	E	E	C
Approach Delay (s)	55.2	49.2	0.0	49.2	0.0	49.2	0.0	49.2	0.0	49.2	0.0	60.2	60.2	60.2	60.2	60.2
Approach LOS	E	E	D	E	D	E	D	E	D	E	D	E	E	E	E	E
Intersection Summary																
HCM 2000 Control Delay		54.3		54.3		54.3		54.3		54.3		D	D	D	D	D
HCM 2000 Volume to Capacity ratio		1.03		1.03		1.03		1.03		1.03		18.6	18.6	18.6	18.6	18.6
Actuated Cycle Length (s)		90.0		90.0		90.0		90.0		90.0		C	C	C	C	C
Intersection Capacity Utilization		70.0%		70.0%		70.0%		70.0%		70.0%		C	C	C	C	C
Analysis Period (min)		15		15		15		15		15		C	C	C	C	C
c Critical Lane Group																

1/19/2016 Baseline

Synchro 9 Report
Page 2

Queues
2: I-575 NB Ramps & Ridgeway Pkwy

No-Build AM Improved
1/20/2016

	EBL	EBT	WBT	WBR	NBT	NBR	
Lane Group	EBL	EBT	WBT	WBR	NBT	NBR	
Lane Configurations	4	4	4	4	4	4	
Traffic Volume (vph)	47	517	499	177	0	395	
Future Volume (vph)	47	517	499	177	0	395	
Lane Group Flow (vph)	65	550	609	216	57	449	
Turn Type	Perm	NA	NA	Perm	NA	Free	
Protected Phases	2	2	6	6	8	Free	
Permitted Phases	2	2	6	6	8	Free	
Detector Phase	2	2	6	6	8	Free	
Switch Phase	2	2	6	6	8	Free	
Minimum Initial (s)	15.0	15.0	6.0	6.0	5.7		
Minimum Split (s)	22.0	22.0	22.0	22.0	12.0		
Total Split (%)	70.0	70.0	70.0	70.0	20.0		
Total Split (%)	77.8%	77.8%	77.8%	77.8%	22.2%		
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3		
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	None	
v/c Ratio	0.10	0.37	0.21	0.16	0.35	0.28	
Control Delay	1.3	1.8	2.4	1.0	43.4	0.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	1.3	1.8	2.4	1.0	43.4	0.5	
Queue Length 50th (ft)	3	39	40	6	31	0	
Queue Length 95th (ft)	m5	m61	52	15	66	0	
Internal Link Dist (ft)	559	534			615		
Turn Bay Length (ft)	420		225				
Base Capacity (vph)	633	1505	2858	1320	269	1583	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.10	0.37	0.21	0.16	0.21	0.28	
Intersection Summary							
Cycle Length: 90							
Actuated Cycle Length: 90							
Offset: 71 (79%), Referenced to phase 2:EBTL and 6:WBT. Start of Green							
Natural Cycle: 40							
Control Type: Actuated-Coordinated							
m Volume for 95th percentile queue is metered by upstream signal.							

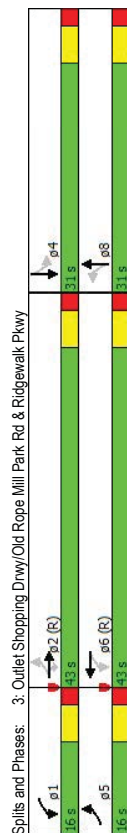


HCM Signalized Intersection Capacity Analysis
2: I-575 NB Ramps & Ridgeway Pkwy

No-Build AM Improved
1/20/2016

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4	4	4
Traffic Volume (vph)	47	517	0	0	499	177	45	0	395	0	0	0
Future Volume (vph)	47	517	0	0	499	177	45	0	395	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	0	0	6.3	6.3	0	0	6.3	0	0	0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.00	0.00	1.00	1.00	0.95	1.00	0.95	1.00	0.00	0.00
Satd. Flow (prot)	1770	1863	0.00	0.00	3539	1583	1770	1863	1770	1583	0.00	0.00
Flt Permitted	0.42	1.00	0.00	0.00	1.00	1.00	0.95	1.00	0.95	1.00	0.00	0.00
Satd. Flow (perm)	785	1863	0.00	0.00	3539	1583	1770	1863	1770	1583	0.00	0.00
Peak-hour factor, PHF	0.72	0.94	0.92	0.92	0.82	0.82	0.79	0.92	0.88	0.92	0.92	0.92
Adj. Flow (vph)	65	550	0	0	609	216	57	0	449	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	65	550	0	0	609	168	0	57	449	0	0	0
Turn Type	Perm	NA	NA	NA	Perm	Perm	NA	Free	Free	NA	NA	NA
Protected Phases	2	2	0	0	6	6	8	8	8	0	0	0
Permitted Phases	2	2	0	0	6	6	8	8	8	0	0	0
Actuated Green, G (s)	70.2	70.2	0.00	0.00	70.2	70.2	7.2	7.2	90.0	0.00	0.00	0.00
Effective Green, g (s)	70.2	70.2	0.00	0.00	70.2	70.2	7.2	7.2	90.0	0.00	0.00	0.00
Actuated g/C Ratio	0.78	0.78	0.00	0.00	0.78	0.78	0.08	0.08	1.00	0.00	0.00	0.00
Clearance Time (s)	6.3	6.3	0.00	0.00	6.3	6.3	6.3	6.3	6.3	0.00	0.00	0.00
Vehicle Extension (s)	5.0	5.0	0.00	0.00	5.0	5.0	5.0	5.0	5.0	0.00	0.00	0.00
Lane Grp Cap (vph)	612	1453	0.00	0.00	2760	1234	141	1583	1583	0.00	0.00	0.00
v/s Ratio Prot	0.30	0.30	0.00	0.00	0.17	0.17	0.03	0.03	0.28	0.00	0.00	0.00
v/c Ratio	0.11	0.38	0.00	0.00	0.22	0.14	0.40	0.28	0.28	0.00	0.00	0.00
Uniform Delay, d1	2.4	3.1	0.00	0.00	2.6	2.4	39.4	0.00	0.00	0.00	0.00	0.00
Progression Factor	0.39	0.43	0.00	0.00	0.79	1.46	1.00	1.00	1.00	0.00	0.00	0.00
Incremental Delay, d2	0.1	0.3	0.00	0.00	0.2	0.2	1.9	0.4	0.4	0.00	0.00	0.00
Delay (s)	1.0	1.6	0.00	0.00	2.3	3.8	41.3	0.4	0.4	0.00	0.00	0.00
Level of Service	A	A	A	A	A	A	D	D	A	A	A	A
Approach Delay (s)	1.5	2.7	0.00	0.00	2.7	2.7	5.0	0.0	0.0	0.00	0.00	0.00
Approach LOS	A	A	A	A	A	A	A	A	A	A	A	A
Intersection Summary												
HCM 2000 Control Delay												
HCM 2000 Volume to Capacity ratio												
Actuated Cycle Length (s)												
Intersection Capacity Utilization												
Analysis Period (min)												
c Critical Lane Group												

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
	76	615	223	64	480	116	6	32	11
	Future Volume (vph)	76	615	223	64	480	116	6	32
	Future Volume (vph)	76	615	223	64	480	116	6	32
	Lane Group Flow (vph)	106	686	226	79	642	136	85	44
Turn Type	pm-pt	NA	Perm	pm-pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	2	1	6	8	8	4	4
Permitted Phases	2	2	2	6	8	8	8	4	4
Detector Phase	5	2	2	1	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	50	150	150	50	150	60	60	60	60
Minimum Split (s)	110	220	220	110	220	120	120	120	120
Minimum Split (s)	160	430	430	160	430	310	310	310	310
Total Split (%)	17.8%	47.8%	47.8%	17.8%	47.8%	34.4%	34.4%	34.4%	34.4%
Total Split (%)	17.8%	47.8%	47.8%	17.8%	47.8%	34.4%	34.4%	34.4%	34.4%
Yellow Time (s)	40	40	40	40	40	40	40	40	40
All-Red Time (s)	20	20	20	20	20	20	20	20	20
Cost Time Adjust (s)	00	00	00	00	00	00	00	00	00
Total Lost Time (s)	60	60	60	60	60	60	60	60	60
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	None	C-Max	C-Max	None	C-Max	None	None	None	None
Recall Mode	0.19	0.35	0.24	0.16	0.32	0.64	0.26	0.21	0.29
C/c Ratio	3.3	5.6	0.6	6.3	12.4	48.4	13.1	32.6	13.0
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.3	5.6	0.6	6.3	12.4	48.4	13.1	32.6	13.0
Queue Length 50th (ft)	8	45	0	16	109	73	9	22	11
Queue Length 95th (ft)	14	103	0	32	140	114	0	38	11
Internal Link Dist (ft)	534			686			232		281
Turn Bay Length (ft)	275	410	268				201		
Base Capacity (vph)	595	1975	936	552	2019	359	505	363	511
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.35	0.24	0.14	0.32	0.38	0.17	0.12	0.19
Intersection Summary									



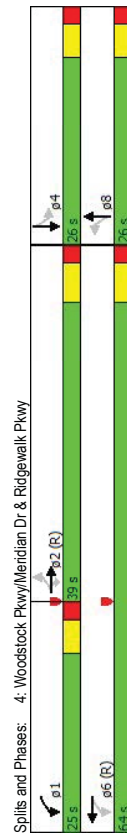
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	615	223	64	480	46	116	6	56	32	11	65
Future Volume (vph)	76	615	223	64	480	46	116	6	56	32	11	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fit	1.00	0.99	0.85	1.00	0.98	1.00	0.88	1.00	0.88	1.00	0.88	1.00
Fit Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1770	3372	1441	1770	3470	1770	1770	1646	1770	1647	1770	1647
Fit Permitted	0.38	1.00	1.00	0.35	1.00	1.00	0.69	1.00	1.00	0.70	1.00	1.00
Satd. Flow (perm)	708	3372	1441	655	3470	1770	1293	1646	1307	1647	1307	1647
Peak-hour factor, PHF	0.72	0.93	0.89	0.81	0.86	0.55	0.85	0.31	0.85	0.72	0.50	0.87
Adj. Flow (vph)	106	661	251	79	558	84	136	19	66	44	22	75
RTOR Reduction (vph)	0	2	97	0	10	0	0	55	0	0	63	0
Lane Group Flow (vph)	106	684	129	79	632	0	136	30	0	44	34	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	NA	Perm	NA	Perm	NA
Prohibited Phases	5	2		1	6		8				4	
Permitted Phases	2		2	6								4
Actuated Green, G (s)	57.8	51.5	51.5	56.8	51.0	14.7	14.7	14.7	14.7	14.7	14.7	14.7
Effective Green, g (s)	57.8	51.5	51.5	56.8	51.0	14.7	14.7	14.7	14.7	14.7	14.7	14.7
Actuated g/C Ratio	0.64	0.57	0.57	0.63	0.57	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	529	1929	824	485	1966	211	268		213	269		
W/s Ratio Prot	c0.01	c0.20	0.01	0.01	0.18		0.02		0.02		0.02	
W/s Ratio Perm	0.11		0.09	0.09		c0.11			0.03		0.03	
c/w Ratio	0.20	0.35	0.16	0.16	0.32	0.16	0.64	0.11	0.21	0.13	0.21	0.13
Uniform Delay, d1	6.2	10.3	9.0	6.5	10.3	35.2	32.1	32.1	32.6	32.2	32.6	32.2
Progression Delay	0.48	0.45	0.03	1.02	1.06	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.5	0.4	0.2	0.4	6.6	0.2	6.6	0.2	0.5	0.2	0.2
Delay (s)	3.1	5.1	0.6	6.8	11.4	41.8	32.3	32.4	33.1	32.4	33.1	32.4
Level of Service	A	A	A	A	B	D	C	C	C	C	C	C
Approach Delay (s)	3.9			10.9			38.1		32.6			
Approach LOS	A			B			D		C			
Intersection Summary												
HCM 2000 Control Delay	11.8	HCM 2000 Level of Service										
HCM 2000 Volume to Capacity ratio	0.40	B										
Actuated Cycle Length (s)	90.0	18.0										
Intersection Capacity Utilization	51.6%	A										
Analysis Period (min)	15											
Critical Lane Group												

Queues
4: Woodstock Pkwy/Meridian Dr & Ridgeway Pkwy

No-Build AM Improved
1/20/2016

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	1	511	204	220	488	86	2	2	6
Traffic Volume (vph)	1	511	204	220	488	86	2	2	6
Future Volume (vph)	1	511	204	220	488	86	2	2	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	0.93
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	0.99
Satd. Flow (prot)	1770	3539	1583	1770	3535	1770	1590	1725	1725
Flt Permitted	0.45	1.00	1.00	0.39	1.00	0.74	1.00	0.95	0.95
Satd. Flow (perm)	840	3539	1583	728	3535	1377	1590	1649	1649
Peak-hour factor, PHF	0.25	0.93	0.93	0.91	0.91	0.25	0.75	0.50	0.62
Adj. Flow (vph)	4	549	219	242	536	4	115	4	10
RTOR Reduction (vph)	0	0	98	0	1	0	0	132	0
Lane Group Flow (vph)	4	549	121	242	539	0	115	26	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	6	6	8	8	4	4
Permitted Phases	2	2	2	6	6	8	8	4	4
Actuated Green, G (s)	49.9	49.9	49.9	65.2	65.2	12.9	12.9	12.9	12.9
Effective Green, g (s)	49.9	49.9	49.9	65.2	65.2	12.9	12.9	12.9	12.9
Actuated g/C Ratio	0.55	0.55	0.55	0.72	0.72	0.14	0.14	0.14	0.14
Clearance Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Vehicle Extension (s)	5.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	465	1962	877	639	2560	197	227	236	236
v/s Ratio Prot	0.16	0.16	0.08	c0.04	0.15	c0.08	c0.08	0.01	0.01
v/s Ratio Perm	0.01	0.28	0.14	0.38	0.21	0.58	0.11	0.07	0.07
Uniform Delay, d1	9.0	10.6	9.7	4.3	4.0	36.0	33.6	33.3	33.3
Progression Factor	0.38	0.32	0.12	1.18	0.85	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.3	0.3	0.4	0.2	4.4	0.2	0.1	0.1
Delay (s)	3.5	3.8	1.4	5.5	2.8	40.4	33.8	33.5	33.5
Level of Service	A	A	A	A	A	D	C	C	C
Approach Delay (s)	3.1	A	A	3.6	A	36.6	A	33.5	A
Approach LOS	A	A	A	A	A	D	C	C	A

Intersection Summary									
Cycle Length: 90									
Actuated Cycle Length: 90									
Offset: 17 (19%), Referenced to phase 2EBTL and 6:WBT, Start of Green									
Natural Cycle: 45									
Control Type: Actuated-Coordinated									



HCM Signalized Intersection Capacity Analysis
4: Woodstock Pkwy/Meridian Dr & Ridgeway Pkwy

No-Build AM Improved
1/20/2016

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	1	511	204	220	488	86	2	2	6
Traffic Volume (vph)	1	511	204	220	488	86	2	2	6
Future Volume (vph)	1	511	204	220	488	86	2	2	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	0.93
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	0.99
Satd. Flow (prot)	1770	3539	1583	1770	3535	1770	1590	1725	1725
Flt Permitted	0.45	1.00	1.00	0.39	1.00	0.74	1.00	0.95	0.95
Satd. Flow (perm)	840	3539	1583	728	3535	1377	1590	1649	1649
Peak-hour factor, PHF	0.25	0.93	0.93	0.91	0.91	0.25	0.75	0.50	0.62
Adj. Flow (vph)	4	549	219	242	536	4	115	4	10
RTOR Reduction (vph)	0	0	98	0	1	0	0	132	0
Lane Group Flow (vph)	4	549	121	242	539	0	115	26	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	6	6	8	8	4	4
Permitted Phases	2	2	2	6	6	8	8	4	4
Actuated Green, G (s)	49.9	49.9	49.9	65.2	65.2	12.9	12.9	12.9	12.9
Effective Green, g (s)	49.9	49.9	49.9	65.2	65.2	12.9	12.9	12.9	12.9
Actuated g/C Ratio	0.55	0.55	0.55	0.72	0.72	0.14	0.14	0.14	0.14
Clearance Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Vehicle Extension (s)	5.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	465	1962	877	639	2560	197	227	236	236
v/s Ratio Prot	0.16	0.16	0.08	c0.04	0.15	c0.08	c0.08	0.01	0.01
v/s Ratio Perm	0.01	0.28	0.14	0.38	0.21	0.58	0.11	0.07	0.07
Uniform Delay, d1	9.0	10.6	9.7	4.3	4.0	36.0	33.6	33.3	33.3
Progression Factor	0.38	0.32	0.12	1.18	0.85	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.3	0.3	0.4	0.2	4.4	0.2	0.1	0.1
Delay (s)	3.5	3.8	1.4	5.5	2.8	40.4	33.8	33.5	33.5
Level of Service	A	A	A	A	A	D	C	C	C
Approach Delay (s)	3.1	A	A	3.6	A	36.6	A	33.5	A
Approach LOS	A	A	A	A	A	D	C	C	A

Intersection Summary									
Cycle Length: 90									
Actuated Cycle Length: 90									
Offset: 17 (19%), Referenced to phase 2EBTL and 6:WBT, Start of Green									
Natural Cycle: 45									
Control Type: Actuated-Coordinated									

Queues
5: Ridge Tr & Ridgewalk Pkwy
No-Build AM Improved
1/20/2016

Movement	EBT	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑
Traffic Volume (vph)	538	21	498	184	77
Future Volume (vph)	538	21	498	184	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	5.6	6.3	5.6	
Lane Util. Factor	0.95	1.00	0.95	1.00	
Flt	0.98	1.00	1.00	0.97	
Flt Protected	1.00	0.95	1.00	0.96	
Satd. Flow (prot)	3467	1770	3539	1735	
Flt Permitted	1.00	0.29	1.00	0.96	
Satd. Flow (perm)	3467	540	3539	1735	
Peak-hour factor, PHF	0.86	0.86	0.88	0.85	0.83
Adj. Flow (vph)	626	98	31	566	283
RTOR Reduction (vph)	11	0	0	15	0
Lane Group Flow (vph)	713	0	31	566	361
Turn Type	NA	pm+pt	NA	Prot	
Protected Phases	2	1	6	8	
Permitted Phases		6			
Actuated Green, G (s)	44.5	54.1	54.1	24.0	
Effective Green, g (s)	44.5	54.1	54.1	24.0	
Actuated g/C Ratio	0.49	0.60	0.60	0.27	
Clearance Time (s)	6.3	5.6	6.3	5.6	
Vehicle Extension (s)	5.0	3.0	5.0	3.0	
Lane Grp Cap (vph)	1714	379	2127	462	
v/s Ratio Prot	c0.21	0.00	c0.16	c0.21	
v/s Ratio Perm		0.05			
v/c Ratio	0.42	0.08	0.27	0.78	
Uniform Delay, d1	14.5	8.1	8.5	30.6	
Progression Factor	0.60	1.47	1.38	1.00	
Incremental Delay, d2	0.7	0.1	0.2	8.3	
Delay (s)	9.3	11.9	12.0	38.9	
Level of Service	A	B	B	D	
Approach Delay (s)	9.3		12.0	38.9	
Approach LOS	A		B	D	
Intersection Summary					
HCM 2000 Control Delay		16.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio		0.54			
Actuated Cycle Length (s)		90.0		Sum of lost time (s)	17.5
Intersection Capacity Utilization		42.4%		ICU Level of Service	A
Analysis Period (min)		15			
c Critical Lane Group					

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HCM Signalized Intersection Capacity Analysis
5: Ridge Tr & Ridgewalk Pkwy
No-Build AM Improved
1/20/2016

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑↑	↑
Traffic Volume (vph)	538	84	21	498	184	77
Future Volume (vph)	538	84	21	498	184	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	5.6	6.3	5.6		
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Flt	0.98	1.00	1.00	0.97		
Flt Protected	1.00	0.95	1.00	0.96		
Satd. Flow (prot)	3467	1770	3539	1735		
Flt Permitted	1.00	0.29	1.00	0.96		
Satd. Flow (perm)	3467	540	3539	1735		
Peak-hour factor, PHF	0.86	0.86	0.88	0.85	0.83	
Adj. Flow (vph)	626	98	31	566	283	93
RTOR Reduction (vph)	11	0	0	15	0	
Lane Group Flow (vph)	713	0	31	566	361	0
Turn Type	NA		pm+pt	NA	Prot	
Protected Phases	2		1	6	8	
Permitted Phases			6			
Actuated Green, G (s)	44.5		54.1	54.1	24.0	
Effective Green, g (s)	44.5		54.1	54.1	24.0	
Actuated g/C Ratio	0.49		0.60	0.60	0.27	
Clearance Time (s)	6.3		5.6	6.3	5.6	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1714		379	2127	462	
v/s Ratio Prot	c0.21		0.00	c0.16	c0.21	
v/s Ratio Perm			0.05			
v/c Ratio	0.42		0.08	0.27	0.78	
Uniform Delay, d1	14.5		8.1	8.5	30.6	
Progression Factor	0.60		1.47	1.38	1.00	
Incremental Delay, d2	0.7		0.1	0.2	8.3	
Delay (s)	9.3		11.9	12.0	38.9	
Level of Service	A		B	B	D	
Approach Delay (s)	9.3			12.0	38.9	
Approach LOS	A			B	D	
Intersection Summary						
HCM 2000 Control Delay			16.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.54			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	17.5
Intersection Capacity Utilization			42.4%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

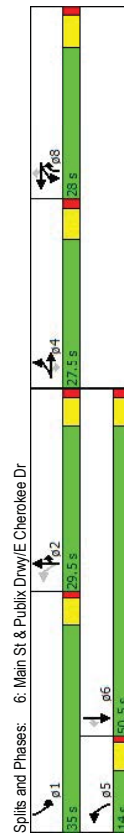
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Queues
6: Main St & Publix Drwy/E Cherokee Dr

No-Build AM Improved
1/20/2016

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT	SBR
Lane Configurations	4	4	8	8	8	8	2	2	6
Traffic Volume (vph)	116	19	517	22	303	18	110	315	512
Future Volume (vph)	116	19	517	22	303	18	110	315	512
Ideal Flow (vphpl)	171	36	301	306	356	36	167	375	632
Turn Type	NA	Perm	Split	NA	Perm	pm-pt	NA	pt-ov	Prot
Protected Phases	4	4	8	8	8	8	2	2	8
Permitted Phases	4	4	8	8	8	8	2	2	8
Detector Phase	4	4	8	8	8	8	2	2	8
Switch Phase	4	4	8	8	8	8	2	2	8
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	15.0	8.0	15.0
Minimum Split (s)	27.5	27.5	27.5	27.5	27.5	27.5	14.0	32.0	32.0
Total Split (%)	27.5	27.5	28.0	28.0	28.0	28.0	29.5	35.0	50.5
Total Split (%)	22.9%	22.9%	23.3%	23.3%	23.3%	23.3%	24.6%	29.2%	42.1%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.5	5.5	5.5
Lead/Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	None	None	None	None	None	None	None	Min	Min
Recall Mode	None	None	None	None	None	None	None	Min	Min
v/c Ratio	0.65	0.10	0.87	0.87	0.58	0.18	0.42	0.48	0.82
Control Delay	58.8	0.5	68.0	68.7	8.7	20.3	42.1	8.6	49.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Length	56.8	0.5	68.0	68.7	8.7	20.3	42.1	8.6	49.2
Queue Length 50th (ft)	120	0	228	232	0	12	102	48	226
Queue Length 95th (ft)	147	0	433	205	61	17	130	87	260
Internal Link Dist (ft)	33	935	650	300	100	546	255	330	494
Turn Bay Length (ft)	376	454	347	351	610	214	431	799	789
Base Capacity (vph)	0	0	0	0	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.08	0.87	0.87	0.58	0.17	0.39	0.47	0.65

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 107.4	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	



HCM Signalized Intersection Capacity Analysis
6: Main St & Publix Drwy/E Cherokee Dr

No-Build AM Improved
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT	SBR
Lane Configurations	3	116	19	517	22	303	18	110	315	512
Traffic Volume (vph)	3	116	19	517	22	303	18	110	315	512
Future Volume (vph)	3	116	19	517	22	303	18	110	315	512
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00
Flt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected	1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1858	1583	1681	1696	1583	1770	1863	1583	3433	1863
Flt Permitted	1.00	1.00	0.95	0.96	1.00	0.16	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1858	1583	1681	1696	1583	295	1863	1583	3433	1863
Peak-hour factor, PHF	0.38	0.71	0.53	0.91	0.56	0.85	0.50	0.66	0.84	0.81
Adj. Flow (vph)	8	163	36	568	39	356	36	167	375	632
RTOR Reduction (vph)	0	0	31	0	0	284	0	0	99	0
Lane Group Flow (vph)	0	171	5	301	306	72	36	167	276	632
Turn Type	Split	NA	Perm	Split	NA	Perm	pm-pt	NA	pt-ov	Prot
Protected Phases	4	4	4	8	8	8	2	2	8	1
Permitted Phases	4	4	4	8	8	8	2	2	8	1
Actuated Green, G (s)	15.2	15.2	22.2	22.2	22.2	22.2	29.8	25.3	24.2	45.0
Effective Green, g (s)	15.2	15.2	22.2	22.2	22.2	22.2	29.8	25.3	24.2	45.0
Actuated g/C Ratio	0.14	0.14	0.20	0.20	0.20	0.20	0.27	0.23	0.43	0.41
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.0	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.0
Lane Grp Cap (vph)	258	219	341	344	321	141	430	687	759	766
v/s Ratio Prot	c0.09	0.00	0.00	0.18	c0.18	0.01	0.09	0.17	c0.18	c0.38
v/s Ratio Perm	0.66	0.02	0.88	0.89	0.23	0.26	0.39	0.40	0.83	0.92
v/c Ratio	44.7	40.7	42.3	42.4	36.4	30.8	35.5	21.2	40.7	30.5
Uniform Delay, d1	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Progression Factor	6.3	0.0	22.5	23.2	0.4	1.0	1.2	0.8	7.8	17.1
Incremental Delay, d2	50.9	40.7	64.8	65.6	36.8	31.8	36.7	22.0	48.5	47.7
Delay (s)	D	D	D	E	E	D	C	D	C	D
Level of Service	D	D	D	E	E	D	C	D	C	D
Approach Delay (s)	49.2	54.7	54.7	54.7	54.7	26.9	26.9	47.7	47.7	47.7
Approach LOS	D	D	D	D	D	C	C	D	D	D

Intersection Summary	
HCM 2000 Control Delay	46.1
HCM 2000 Volume to Capacity ratio	0.89
Actuated Cycle Length (s)	109.4
Intersection Capacity Utilization	65.1%
Analysis Period (min)	15
c Critical Lane Group	

HCM Unsignalized Intersection Capacity Analysis 7: Main St & Rope Mill Rd/E Main St

HCM Unsignalized Intersection Capacity Analysis 8: Woodstock Pkwy & Outlet Shopping Drwy/Rope Mill Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	13	2	149	1	0	0	116	199	2	4	531	28
Traffic Volume (veh/h)	13	2	149	1	0	0	116	199	2	4	531	28
Future Volume (veh/h)	13	2	149	1	0	0	116	199	2	4	531	28
Sign Control	Stop	0%	0%	Stop	0%	0%	Free	0%	0%	Free	0%	Free
Grade	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.38	0.25	0.69	0.25	0.92	0.92	0.42	0.90	0.50	0.33	0.88	0.57
Hourly flow rate (vph)	34	8	216	4	0	0	276	221	4	12	603	49
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage (veh)												
Upstream signal (ft)												
pX platoon unblocked												
VC, conflicting volume	1426	1428	628	1646	1451	223	652					225
VC1, stage 1 conf vol												
VC2, stage 2 conf vol												
VCu, unblocked vol	1426	1428	628	1646	1451	223	652					225
IC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1					4.1
IC, 2 stage (s)												
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2					2.2
p0 queue free %	61	92	55	87	100	100	70					99
CM capacity (veh/h)	87	94	483	32	91	817	935					1344
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	258	4	501	664								
Volume Left	34	4	276	12								
Volume Right	216	0	4	49								
cSH	279	32	935	1344								
Volume to Capacity	0.92	0.13	0.30	0.01								
Queue Length 95th (ft)	215	10	31	1								
Control Delay (s)	76.2	135.0	7.4	0.2								
Lane LOS	F	F	A	A								
Approach Delay (s)	76.2	135.0	7.4	0.2								
Approach LOS	F	F										
Intersection Summary												
Average Delay												
Intersection Capacity Utilization												
Analysis Period (min)												

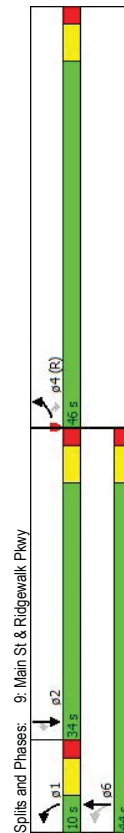
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	26	40	43	70	40	60	66	109	50	63	222	30
Future Volume (veh/h)	26	40	43	70	40	60	66	109	50	63	222	30
Peak Hour Factor	0.67	0.75	0.81	0.66	0.60	0.75	0.62	0.82	0.75	0.79	0.73	0.75
Hourly flow rate (vph)	39	53	53	106	67	80	106	133	67	80	304	40
Approach Volume (veh/h)	145			253			306				424	
Crossing Volume (veh/h)	490			278			172				279	
High Capacity (veh/h)	941			1114			1210				1113	
High v/c (veh/h)	0.15			0.23			0.25				0.38	
Low Capacity (veh/h)	761			915			1003				915	
Low v/c (veh/h)	0.19			0.28			0.31				0.46	
Intersection Summary												
Maximum v/c High												
Maximum v/c Low												
Intersection Capacity Utilization												
ICU Level of Service												

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	429	178	53	168	352	436
Future Volume (vph)	429	178	53	168	352	436
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1583	1863	1583
Flt Permitted	0.95	1.00	0.20	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	374	1863	1863	1583
Peak-hour factor, PHF	0.85	0.86	0.92	0.79	0.94	0.85
Adj. Flow (vph)	505	207	58	213	374	513
RTOR Reduction (vph)	0	100	0	0	0	323
Lane Group Flow (vph)	505	107	58	213	374	190
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	46.5	46.5	31.5	31.5	22.3	22.3
Effective Green, g (s)	46.5	46.5	31.5	31.5	22.3	22.3
Actuated g/C Ratio	0.52	0.52	0.35	0.35	0.25	0.25
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	5.0	5.0	5.0
Lane Grp Cap (vph)	914	817	180	652	461	392
v/s Ratio Prot	c0.29		0.07	0.10	c0.11	c0.20
v/s Ratio Perm		0.07	0.10			0.12
v/c Ratio	0.55	0.13	0.32	0.33	0.81	0.48
Uniform Delay, d1	14.7	11.3	21.5	21.5	31.9	28.9
Progression Factor	0.39	0.02	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.3	1.0	0.6	11.7	2.0
Delay (s)	7.9	0.6	22.6	22.1	43.6	30.9
Level of Service	A	A	C	C	D	C
Approach Delay (s)	5.8		22.2	36.2		
Approach LOS	A		C	D		
Intersection Summary						
HCM 2000 Control Delay			22.6			C
HCM 2000 Volume to Capacity ratio			0.64			
Actuated Cycle Length (s)			90.0			18.0
Intersection Capacity Utilization			60.6%			B
Analysis Period (min)			15			
c Critical Lane Group						



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	429	178	53	168	352	436
Future Volume (vph)	429	178	53	168	352	436
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1583	1863	1583
Flt Permitted	0.95	1.00	0.20	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	374	1863	1863	1583
Peak-hour factor, PHF	0.85	0.86	0.92	0.79	0.94	0.85
Adj. Flow (vph)	505	207	58	213	374	513
RTOR Reduction (vph)	0	100	0	0	0	323
Lane Group Flow (vph)	505	107	58	213	374	190
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	46.5	46.5	31.5	31.5	22.3	22.3
Effective Green, g (s)	46.5	46.5	31.5	31.5	22.3	22.3
Actuated g/C Ratio	0.52	0.52	0.35	0.35	0.25	0.25
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	5.0	5.0	5.0
Lane Grp Cap (vph)	914	817	180	652	461	392
v/s Ratio Prot	c0.29		0.07	0.10	c0.11	c0.20
v/s Ratio Perm		0.07	0.10			0.12
v/c Ratio	0.55	0.13	0.32	0.33	0.81	0.48
Uniform Delay, d1	14.7	11.3	21.5	21.5	31.9	28.9
Progression Factor	0.39	0.02	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2	0.3	1.0	0.6	11.7	2.0
Delay (s)	7.9	0.6	22.6	22.1	43.6	30.9
Level of Service	A	A	C	C	D	C
Approach Delay (s)	5.8		22.2	36.2		
Approach LOS	A		C	D		
Intersection Summary						
HCM 2000 Control Delay			22.6			C
HCM 2000 Volume to Capacity ratio			0.64			
Actuated Cycle Length (s)			90.0			18.0
Intersection Capacity Utilization			60.6%			B
Analysis Period (min)			15			
c Critical Lane Group						

Queues
2: I-575 NB Ramps & Ridgeway Pkwy

No-Build PM Improved
1/20/2016

	EBL	EBT	WBT	WBR	NBT	NBR	
Lane Group	EBL	EBT	WBT	WBR	NBT	NBR	
Lane Configurations	36	305	800	423	0	559	
Traffic Volume (vph)	36	305	800	423	0	559	
Future Volume (vph)	36	305	800	423	0	559	
Lane Group Flow (vph)	56	339	833	455	158	582	
Turn Type	Perm	NA	NA	Perm	NA	Free	
Protected Phases	2	2	6	6	8	Free	
Permitted Phases	2	2	6	6	8	Free	
Detector Phase	2	2	6	6	8	Free	
Switch Phase	2	2	6	6	8	Free	
Minimum Initial (s)	15.0	15.0	6.0	6.0	5.7		
Minimum Split (s)	22.0	22.0	22.0	22.0	12.0		
Total Split (%)	52.0	52.0	52.0	52.0	28.0		
Total Split (%)	65.0%	65.0%	65.0%	65.0%	35.0%		
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3		
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	None	
v/c Ratio	0.13	0.26	0.34	0.37	0.58	0.37	
Control Delay	1.7	1.9	4.2	1.2	39.1	0.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	1.7	1.9	4.2	1.2	39.1	0.7	
Queue Length 50th (ft)	0	3	55	0	74	0	
Queue Length 95th (ft)	m5	m33	m82	m12	124	0	
Internal Link Dist (ft)	420	559	534	225	615		
Turn Bay Length (ft)	418	1280	2432	1230	480	1583	
Base Capacity (vph)	0	0	0	0	0	0	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.26	0.34	0.37	0.33	0.37	
Intersection Summary							
Cycle Length: 80							
Actuated Cycle Length: 80							
Offset: 57 (71%), Referenced to phase 2:EBTL and 6:WBT. Start of Green							
Natural Cycle: 40							
Control Type: Actuated-Coordinated							
m Volume for 95th percentile queue is metered by upstream signal.							



HCM Signalized Intersection Capacity Analysis
2: I-575 NB Ramps & Ridgeway Pkwy

No-Build PM Improved
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	→			↗	↗		↖	↖		→	↖
Traffic Volume (vph)	36	305	0	0	800	423	131	0	559	0	0	0
Future Volume (vph)	36	305	0	0	800	423	131	0	559	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3			6.3	6.3		6.3	4.0			
Lane Util. Factor	1.00	1.00			0.95	1.00		1.00	1.00			
Flt Protected	1.00	1.00			1.00	0.85		1.00	0.85			
Flt	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	1863			3539	1583		1770	1583			
Flt Permitted	0.33	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	610	1863			3539	1583		1770	1583			
Peak-hour factor, PHF	0.64	0.90	0.92	0.92	0.96	0.93	0.83	0.92	0.96	0.92	0.92	0.92
Adj. Flow (vph)	56	339	0	0	833	455	158	0	582	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	142	0	0	0	0	0	0
Lane Group Flow (vph)	56	339	0	0	833	313	0	158	582	0	0	0
Turn Type	Perm	NA	NA	NA	Perm	Perm	Perm	NA	Free	NA	Free	Free
Protected Phases	2	2			6	6	8	8				
Permitted Phases	2	2			6	6	8	8				
Actuated Green, G (s)	55.0	55.0			55.0	55.0	12.4	12.4	80.0			
Effective Green, g (s)	55.0	55.0			55.0	55.0	12.4	12.4	80.0			
Actuated g/C Ratio	0.69	0.69			0.69	0.69	0.16	0.16	1.00			
Clearance Time (s)	6.3	6.3			6.3	6.3	6.3	6.3				
Vehicle Extension (s)	5.0	5.0			5.0	5.0	3.0	3.0				
Lane Grp Cap (vph)	419	1280			2433	1088	274	1583				
v/s Ratio Prot	0.18	0.18			0.24	0.24	0.09	0.09	0.37			
v/s Ratio Perm	0.09	0.13			0.34	0.29	0.58	0.37				
v/c Ratio	0.13	0.26			0.34	0.29	0.58	0.37				
Uniform Delay, d1	4.3	4.8			5.1	4.9	31.4	0.0				
Progression Factor	0.23	0.28			0.70	0.91	1.00	1.00				
Incremental Delay, d2	0.4	0.3			0.3	0.5	2.9	0.7				
Delay (s)	1.4	1.7			3.8	4.9	34.3	0.7				
Level of Service	A	A			A	A	C	A				
Approach Delay (s)	1.6	1.6			4.2	4.2	7.8	0.0				
Approach LOS	A	A			A	A	A	A				
Intersection Summary												
HCM 2000 Control Delay	4.9						HCM 2000 Level of Service					
HCM 2000 Volume to Capacity ratio	0.44						A					
Actuated Cycle Length (s)	80.0						Sum of lost time (s)					
Intersection Capacity Utilization	69.9%						C					
Analysis Period (min)	15											
Critical Lane Group												

Queues

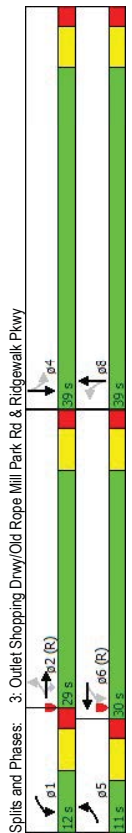
3: Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

HCM Signalized Intersection Capacity Analysis

3: Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT
Lane Configurations	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT
Traffic Volume (vph)	71	580	256	76	776	283	21	57
Future Volume (vph)	71	580	256	76	776	283	21	57
Ideal Flow (vphpl)	76	640	262	101	964	311	159	66
Turn Type	pm-pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	5	2	2	1	6	8	8	4
Permitted Phases	2	2	2	1	6	8	8	4
Detector Phase	5	2	2	1	6	8	8	4
Switch Phase	5	2	2	1	6	8	8	4
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	6.0	6.0	6.0
Minimum Split (s)	11.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0
Total Split (s)	11.0	29.0	29.0	12.0	30.0	39.0	39.0	39.0
Total Split (%)	13.8%	36.3%	36.3%	15.0%	37.5%	48.8%	48.8%	48.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	None	C-Max	C-Max	None	C-Max	None	None	None
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None
v/c Ratio	0.36	0.55	0.39	0.32	0.77	0.95	0.23	0.14
Control Delay	15.8	18.4	2.7	9.6	20.0	65.0	5.3	15.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Length	15.8	18.4	2.7	9.6	20.0	65.0	5.3	15.8
Queue Length 50th (ft)	14	117	0	17	87	139	9	20
Queue Length 95th (ft)	36	167	0	24	#167	#293	22	44
Internal Link Dist (ft)	534			686		232		281
Turn Bay Length (ft)	275	410	268				201	
Base Capacity (vph)	213	1174	671	319	1251	355	750	785
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.55	0.39	0.32	0.77	0.88	0.21	0.13

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 68 (85%), Referenced to phase 2 EBT and 6 WBT, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	



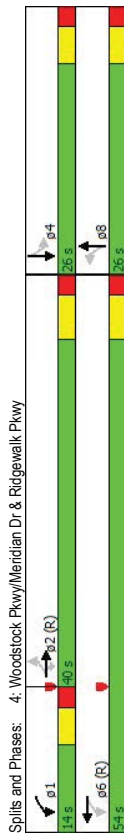
Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT
Lane Configurations	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT
Traffic Volume (vph)	71	580	256	76	776	283	21	57
Future Volume (vph)	71	580	256	76	776	283	21	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.99	0.85	1.00	0.98	1.00	0.88	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95
Satd. Flow (prot)	1770	3367	1441	1770	3478	1770	1638	1770
Flt Permitted	0.15	1.00	1.00	0.29	1.00	0.46	1.00	0.66
Satd. Flow (perm)	280	3367	1441	533	3478	862	1638	1222
Peak-hour factor, PHF	0.94	0.95	0.88	0.75	0.91	0.63	0.91	0.87
Adj. Flow (vph)	76	611	291	101	853	111	311	66
RTOR Reduction (vph)	0	4	175	0	12	0	79	0
Lane Group Flow (vph)	76	636	87	101	952	0	311	66
Turn Type	pm-pt	NA	Perm	pm-pt	NA	Perm	NA	Perm
Protected Phases	5	2	2	1	6	8	8	4
Permitted Phases	2	2	2	1	6	8	8	4
Actuated Green, G (s)	30.9	26.6	26.6	32.3	27.3	30.4	30.4	30.4
Effective Green, g (s)	30.9	26.6	26.6	32.3	27.3	30.4	30.4	30.4
Actuated g/c Ratio	0.39	0.33	0.33	0.40	0.34	0.38	0.38	0.38
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0
Lane Grp Cap (vph)	188	1119	479	292	1186	327	622	464
v/s Ratio Prot	c0.02	0.19	0.06	0.12	c0.27	c0.36	0.05	0.13
v/s Ratio Perm	0.13	0.06	0.18	0.35	0.80	0.95	0.13	0.33
v/c Ratio	0.40	0.57	0.18	0.35	0.80	0.95	0.13	0.33
Uniform Delay, d1	17.1	22.0	19.0	15.5	23.9	24.1	16.2	17.6
Progression Factor	0.82	0.72	0.30	0.53	0.57	1.00	1.00	1.00
Incremental Delay, d2	1.4	2.0	0.8	0.7	5.5	36.8	0.1	0.3
Delay (s)	15.4	17.9	6.5	8.9	19.2	60.9	16.3	17.9
Level of Service	B	B	A	A	B	E	B	B
Approach Delay (s)	14.6			18.2		45.8		17.6
Approach LOS	B			B		D		B

Intersection Summary	
HCM 2000 Control Delay	21.4
HCM 2000 Volume to Capacity ratio	0.85
Actuated Cycle Length (s)	80.0
Intersection Capacity Utilization	75.9%
Analysis Period (min)	15
c Critical Lane Group	

Queues
4: Woodstock Pkwy/Meridian Dr & Ridgeway Pkwy
1/19/2016 Baseline

HCM Signalized Intersection Capacity Analysis
4: Woodstock Pkwy/Meridian Dr & Ridgeway Pkwy
1/19/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	1	1	1	1	1	1	1	1	1
Traffic Volume (vph)	11	685	63	97	794	118	8	1	2
Future Volume (vph)	11	685	63	97	794	118	8	1	2
Ideal Flow (vphpl)	22	714	84	120	937	137	262	0	22
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	2	2	2	2	2	2
Permitted Phases	2	2	2	2	2	2	2	2	2
Detector Phase	2	2	2	2	2	2	2	2	2
Switch Phase	2	2	2	2	2	2	2	2	2
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	6.4	6.4	6.0	6.0
Minimum Split (s)	22.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Total Split (%)	40.0	40.0	40.0	14.0	54.0	26.0	26.0	26.0	26.0
Total Split (%)	50.0%	50.0%	50.0%	17.5%	67.5%	32.5%	32.5%	32.5%	32.5%
Yellow Time (s)	4.3	4.3	4.3	3.6	4.3	3.6	3.6	3.6	3.6
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.07	0.37	0.09	0.24	0.39	0.59	0.56	0.08	0.08
Control Delay	7.5	6.3	0.5	9.1	11.9	40.3	9.7	16.2	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.5	6.3	0.5	9.1	11.9	40.3	9.7	16.2	16.2
Queue Length 50th (ft)	2	44	1	35	166	64	8	3	3
Queue Length 95th (ft)	5	68	0	71	242	103	0	9	9
Internal Link Dist (ft)	686	110	90	555	531	187	531	144	144
Turn Bay Length (ft)	313	1950	922	524	2415	352	590	405	405
Base Capacity (vph)	0	0	0	0	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.37	0.09	0.23	0.39	0.39	0.44	0.05	0.05
Intersection Summary									
Cycle Length: 80									
Actuated Cycle Length: 80									
Offset: 70 (88%), Referenced to phase 2 EBT and 6 WBT, Start of Green									
Natural Cycle: 45									
Control Type: Actuated-Coordinated									



Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	1	1	1	1	1	1	1	1	1
Traffic Volume (vph)	11	685	63	97	794	118	8	1	2
Future Volume (vph)	11	685	63	97	794	118	8	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.99	0.99
Satd. Flow (prot)	1770	3539	1583	1770	3531	1770	1603	1887	1887
Flt Permitted	0.31	1.00	1.00	0.31	1.00	0.74	1.00	0.91	0.91
Satd. Flow (perm)	588	3539	1583	576	3531	1384	1603	1548	1548
Peak-hour factor, PHF	0.50	0.96	0.75	0.81	0.86	0.42	0.86	0.44	0.81
Adj. Flow (vph)	22	714	84	120	923	14	137	18	244
RTOR Reduction (vph)	0	0	39	0	1	0	203	0	12
Lane Group Flow (vph)	22	714	45	120	936	0	137	59	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	2	2	2	2	2	2
Permitted Phases	2	2	2	2	2	2	2	2	2
Actuated Green, G (s)	43.0	43.0	43.0	54.7	54.7	13.4	13.4	13.4	13.4
Effective Green, g (s)	43.0	43.0	43.0	54.7	54.7	13.4	13.4	13.4	13.4
Actuated g/C Ratio	0.54	0.54	0.54	0.68	0.68	0.17	0.17	0.17	0.17
Clearance Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Vehicle Extension (s)	5.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	305	1902	850	484	2414	231	268	259	259
v/s Ratio Prot	0.20	0.02	0.02	c0.27	c0.10	0.04	0.04	0.01	0.01
v/s Ratio Perm	0.04	0.03	0.03	0.15	0.15	0.04	0.04	0.04	0.04
v/s Ratio	0.07	0.38	0.05	0.25	0.39	0.59	0.22	0.04	0.04
Uniform Delay, d1	8.9	10.7	8.8	4.9	5.4	30.8	28.8	27.9	27.9
Progression Factor	0.57	0.48	0.20	1.60	1.86	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.5	0.1	0.3	0.4	4.0	4.0	4.0	4.0
Delay (s)	5.5	5.7	1.9	8.1	10.6	34.8	29.2	28.0	28.0
Level of Service	A	A	A	A	B	C	C	C	C
Approach Delay (s)	5.3	5.3	5.3	10.3	10.3	31.1	31.1	28.0	28.0
Approach LOS	A	A	A	B	B	C	C	C	C
Intersection Summary									
HCM 2000 Control Delay									
HCM 2000 Volume to Capacity ratio									
Actuated Cycle Length (s)									
Intersection Capacity Utilization									
Analysis Period (min)									
c Critical Lane Group									

Lane Group	EBT	WBL	WBT	NBL
Lane Configurations	↑↑	↑	↑↑	↑
Traffic Volume (vph)	707	82	747	131
Future Volume (vph)	707	82	747	131
Lane Group Flow (vph)	964	93	869	219
Turn Type	NA	pm+pt	NA	Prot
Protected Phases	2	1	6	8
Permitted Phases	6			
Detector Phase	2	1	6	8
Switch Phase				
Minimum Initial (s)	15.0	5.0	15.0	6.0
Minimum Split (s)	22.0	11.0	22.0	12.0
Total Split (%)	44.0	11.0	55.0	25.0
Total Split (%)	55.0%	13.8%	68.8%	31.3%
Yellow Time (s)	4.3	3.6	4.3	3.6
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	5.6	6.3	5.6
Lead/Lag	Lag	Lead		
Lead-Lag Optimize?				
Recall Mode	C-Max	None	C-Max	None
v/c Ratio	0.50	0.24	0.36	0.67
Control Delay	6.1	9.2	10.7	37.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.1	9.2	10.7	37.2
Queue Length 50th (ft)	79	20	124	92
Queue Length 95th (ft)	98	m33	210	136
Internal Link Dist (ft)	483		884	282
Turn Bay Length (ft)	100			
Base Capacity (vph)	1917	381	2383	436
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.50	0.24	0.36	0.50
Intersection Summary				
Cycle Length: 80				
Actuated Cycle Length: 80				
Offset: 23 (29%), Referenced to phase 2EBT and 6:WBT.L Start of Green				
Natural Cycle: 50				
Control Type: Actuated-Coordinated				
m Volume for 95th percentile queue is metered by upstream signal.				
Splits and Phases: 5: Ridge Tr & Ridgewalk Pkwy				

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Volume (vph)	707	157	82	747	131	54
Future Volume (vph)	707	157	82	747	131	54
Ideal Flow (vphpb)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	5.6	6.3	5.6		
Lane Util. Factor	0.95	1.00	0.95	1.00		
Frt	0.97	1.00	1.00	0.96		
Flt Protected	1.00		0.95	1.00	0.97	
Satd. Flow (prot)	3436		1770	3539	1730	
Flt Permitted	1.00		0.21	1.00	0.97	
Satd. Flow (perm)	3436		396	3539	1730	
Peak-hour factor, PHF	0.91	0.84	0.88	0.86	0.83	0.88
Adj. Flow (vph)	777	187	93	869	188	61
RTOR Reduction (vph)	23	0	0	0	19	0
Lane Group Flow (vph)	941	0	93	869	200	0
Turn Type	NA		pm+pt	NA	Prot	
Protected Phases	2		1	6	8	
Permitted Phases			6			
Actuated Green, G (s)	43.0		53.9	53.9	14.2	
Effective Green, g (s)	43.0		53.9	53.9	14.2	
Actuated g/C Ratio	0.54		0.67	0.67	0.18	
Clearance Time (s)	6.3		5.6	6.3	5.6	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1846		357	2384	307	
v/s Ratio Prot	c0.27		0.02	c0.25	c0.12	
v/s Ratio Perm			0.16			
v/c Ratio	0.51		0.26	0.36	0.65	
Uniform Delay, d1	11.8		5.9	5.6	30.6	
Progression Factor	0.43		1.57	1.66	1.00	
Incremental Delay, d2	0.9		0.2	0.3	4.9	
Delay (s)	6.0		9.6	9.6	35.5	
Level of Service	A		A	A	D	
Approach Delay (s)	6.0		9.6	35.5		
Approach LOS	A		A	D		
Intersection Summary						
HCM 2000 Control Delay			10.6		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.55			
Actuated Cycle Length (s)			80.0		Sum of lost time (s)	17.5
Intersection Capacity Utilization			54.2%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

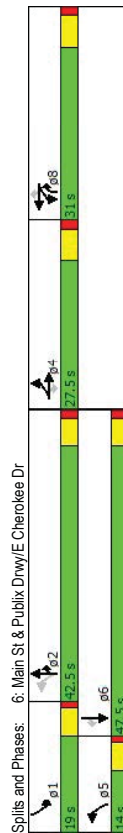
Queues
6: Main St & Publix Drwy/E Cherokee Dr

HCM Signalized Intersection Capacity Analysis
6: Main St & Publix Drwy/E Cherokee Dr

No-Build PM Improved
1/20/2016

Lane Group	EBT	EBL	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4	4
Traffic Volume (vph)	81	81	75	389	78	423	108	421	600	327	236
Future Volume (vph)	81	81	75	389	78	423	108	421	600	327	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.95	1.00	1.00	0.95	1.00	0.95
Flt Protected	0.98	0.98	1.00	0.95	0.97	1.00	0.95	1.00	0.95	1.00	0.95
Satd. Flow (prot)	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Flt Permitted	0.98	0.98	1.00	0.95	0.97	1.00	0.95	1.00	0.95	1.00	0.95
Satd. Flow (perm)	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Peak-hour factor, PHF	0.58	0.58	0.79	0.74	0.82	0.86	0.82	0.91	0.90	0.86	0.89
Adj. Flow (vph)	71	71	103	101	474	118	516	119	468	367	257
RTOR Reduction (vph)	0	0	86	0	0	0	340	0	180	0	0
Lane Group Flow (vph)	0	174	15	294	298	176	119	468	518	367	257
Turn Type	Split	NA	NA	Perm	Split	NA	Perm	pm+pt	NA	pt+ov	Prot
Protected Phases	4	4	4	4	8	8	8	8	2	28	1
Permitted Phases	4	4	4	4	8	8	8	8	2	28	1
Actuated Green, G (s)	15.6	15.6	15.6	23.7	23.7	23.7	23.7	40.5	31.7	55.4	14.0
Effective Green, g (s)	15.6	15.6	15.6	23.7	23.7	23.7	23.7	40.5	31.7	55.4	14.0
Actuated g/C Ratio	0.15	0.15	0.15	0.22	0.22	0.22	0.22	0.38	0.29	0.52	0.13
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.0	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	264	229	370	378	378	348	463	549	815	447	639
v/s Ratio Prot	c0.10	c0.10	c0.17	0.17	0.17	0.11	0.08	0.02	c0.25	0.33	0.11
v/s Ratio Perm	0.66	0.66	0.06	0.79	0.79	0.51	0.26	0.85	0.64	0.82	0.40
v/s Ratio	43.4	39.7	39.6	39.6	39.6	36.8	22.4	35.7	18.8	45.5	26.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.8	0.1	11.2	10.4	1.2	0.3	13.3	2.3	11.5	0.9	0.0
Delay (s)	49.3	39.8	50.8	50.0	37.9	22.7	49.0	21.0	57.0	27.8	23.3
Level of Service	D	D	D	D	D	D	D	C	D	C	C
Approach Delay (s)	45.8	45.8	44.6	44.6	44.6	44.6	44.6	31.4	44.1	44.1	44.1
Approach LOS	D	D	D	D	D	D	D	C	D	D	D
Intersection Summary											
HCM 2000 Control Delay	39.5										
HCM 2000 Volume to Capacity ratio	0.79										
Actuated Cycle Length (s)	107.5										
Intersection Capacity Utilization	69.6%										
Analysis Period (min)	15										
c Critical Lane Group											

Cycle Length: 120	
Actuated Cycle Length: 107.8	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	



HCM Unsignalized Intersection Capacity Analysis 7: Main St & Rope Mill Rd/E Main St

HCM Unsignalized Intersection Capacity Analysis 8: Woodstock Pkwy & Outlet Shopping Drwy/Rope Mill Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	17	0	112	10	4	0	100	441	8	0	400	30
Traffic Volume (veh/h)	17	0	112	10	4	0	100	441	8	0	400	30
Future Volume (veh/h)	17	0	112	10	4	0	100	441	8	0	400	30
Sign Control	Stop	0%	Stop	0%	Stop	0%	Free	0%	Free	0%	Free	0%
Grade	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.62	0.25	0.87	0.75	0.50	0.92	0.95	0.96	0.88	0.33	0.85	0.75
Hourly flow rate (vph)	27	0	129	13	8	0	105	459	9	0	471	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage (veh)												
Upstream signal (ft)												
pX platoon unblocked												
VC, conflicting volume	1168	1169	491	1294	1184	464	511					468
VC1, stage 1 conf vol												
VC2, stage 2 conf vol												
VCu, unblocked vol	1168	1169	491	1294	1184	464	511					468
IC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1					4.1
IC, 2 stage (s)												
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2					2.2
p0 queue free %	82	100	78	87	95	100	90					100
CM capacity (veh/h)	152	174	578	100	170	599	1054					1094
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	156	21	573	511								
Volume Left	27	13	105	0								
Volume Right	129	0	9	40								
cSH	389	119	1054	1094								
Volume to Capacity	0.40	0.18	0.10	0.00								
Queue Length 95th (ft)	47	15	8	0								
Control Delay (s)	20.3	41.7	2.6	0.0								
Lane LOS	C	E	A									
Approach Delay (s)	20.3	41.7	2.6	0.0								
Approach LOS	C	E										
Intersection Summary												
Average Delay												
Intersection Capacity Utilization												
Analysis Period (min)												

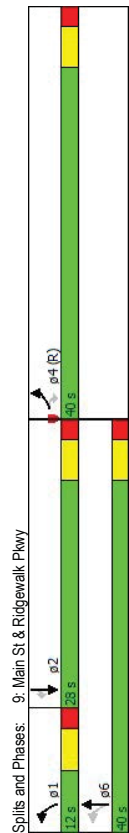
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	20	35	85	22	39	60	45	191	21	39	47	11
Future Volume (veh/h)	20	35	85	22	39	60	45	191	21	39	47	11
Peak Hour Factor	0.57	0.91	0.83	0.50	0.89	0.88	0.71	0.73	0.71	0.73	0.70	0.45
Hourly flow rate (vph)	35	38	102	44	44	68	63	262	30	53	67	24
Approach Volume (veh/h)												
Crossing Volume (veh/h)	175	156	355									144
High Capacity (veh/h)	1218	1218	1218	1044	1044	1044	1255	1255	1255	1231	1231	1231
High v/c (veh/h)	0.14	0.14	0.15	0.15	0.15	0.15	0.28	0.28	0.28	0.12	0.12	0.12
Low Capacity (veh/h)	1010	1010	1010	853	853	853	1043	1043	1043	1021	1021	1021
Low v/c (veh/h)	0.17	0.17	0.17	0.18	0.18	0.18	0.34	0.34	0.34	0.14	0.14	0.14
Intersection Summary												
Maximum v/c High												
Maximum v/c Low												
Intersection Capacity Utilization												
ICU Level of Service												

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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	592	162	189	407	297	646
Future Volume (vph)	592	162	189	407	297	646
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fit Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Fit Permitted	0.95	1.00	0.26	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	481	1863	1863	1583
Peak-hour factor, PHF	0.92	0.90	0.95	0.89	0.92	0.81
Adj. Flow (vph)	643	180	199	457	323	798
RTOR Reduction (vph)	0	96	0	0	0	611
Lane Group Flow (vph)	643	84	199	457	323	187
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4	1	6	2		
Permitted Phases		4	6		2	
Actuated Green, G (s)	37.3	37.3	30.7	30.7	18.7	18.7
Effective Green, g (s)	37.3	37.3	30.7	30.7	18.7	18.7
Actuated g/C Ratio	0.47	0.47	0.38	0.38	0.23	0.23
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	5.0	5.0	5.0
Lane Grp Cap (vph)	825	738	281	714	435	370
v/s Ratio Prot	0.36	0.05	0.25	0.17		
v/s Ratio Perm	0.78	0.11	0.71	0.64	0.74	0.50
v/c Ratio	17.9	12.0	18.9	20.1	28.4	26.6
Uniform Delay, d1	0.32	0.04	1.00	1.00	1.00	1.00
Progression Factor	6.4	0.3	7.9	2.7	8.0	2.3
Incremental Delay, d2	12.0	0.7	26.8	22.8	36.5	28.9
Delay (s)						
Level of Service	B	A	C	C	D	C
Approach Delay (s)	9.6		24.0	31.1		
Approach LOS	A		C	C	C	
Intersection Summary						
HCM 2000 Control Delay			22.5			C
HCM 2000 Volume to Capacity ratio			0.81			
Actuated Cycle Length (s)			80.0			18.0
Intersection Capacity Utilization			73.9%			D
Analysis Period (min)			15			
c Critical Lane Group						



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	592	162	189	407	297	646
Future Volume (vph)	592	162	189	407	297	646
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fit Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Fit Permitted	0.95	1.00	0.26	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	481	1863	1863	1583
Peak-hour factor, PHF	0.92	0.90	0.95	0.89	0.92	0.81
Adj. Flow (vph)	643	180	199	457	323	798
RTOR Reduction (vph)	0	96	0	0	0	611
Lane Group Flow (vph)	643	84	199	457	323	187
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4	1	6	2		
Permitted Phases		4	6		2	
Actuated Green, G (s)	37.3	37.3	30.7	30.7	18.7	18.7
Effective Green, g (s)	37.3	37.3	30.7	30.7	18.7	18.7
Actuated g/C Ratio	0.47	0.47	0.38	0.38	0.23	0.23
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	5.0	5.0	5.0
Lane Grp Cap (vph)	825	738	281	714	435	370
v/s Ratio Prot	0.36	0.05	0.25	0.17		
v/s Ratio Perm	0.78	0.11	0.71	0.64	0.74	0.50
v/c Ratio	17.9	12.0	18.9	20.1	28.4	26.6
Uniform Delay, d1	0.32	0.04	1.00	1.00	1.00	1.00
Progression Factor	6.4	0.3	7.9	2.7	8.0	2.3
Incremental Delay, d2	12.0	0.7	26.8	22.8	36.5	28.9
Delay (s)						
Level of Service	B	A	C	C	D	C
Approach Delay (s)	9.6		24.0	31.1		
Approach LOS	A		C	C	C	
Intersection Summary						
HCM 2000 Control Delay			22.5			C
HCM 2000 Volume to Capacity ratio			0.81			
Actuated Cycle Length (s)			80.0			18.0
Intersection Capacity Utilization			73.9%			D
Analysis Period (min)			15			
c Critical Lane Group						

Queues
1: I-575 SB Ramps & Ridgewalk Pkwy

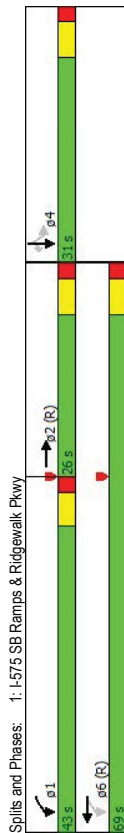
HCM Signalized Intersection Capacity Analysis
1: I-575 SB Ramps & Ridgewalk Pkwy

No-Build SAT Improved
1/20/2016

No-Build SAT Improved
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Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Configurations	EB	WB	WB	SB	SB
Traffic Volume (vph)	96	723	151	3	22
Future Volume (vph)	96	723	151	3	22
Lane Group Flow (vph)	286	745	188	414	44
Turn Type	NA	pm+pt	NA	NA	Perm
Protected Phases	2	1	6	4	4
Permitted Phases	6	6	6	4	4
Detector Phase	2	1	6	4	4
Switch Phase	2	1	6	4	4
Minimum Initial (s)	15.0	5.0	15.0	6.0	6.0
Minimum Split (s)	21.3	11.0	22.0	13.0	13.0
Total Split (s)	26.0	43.0	69.0	31.0	31.0
Total Split (%)	26.0%	43.0%	69.0%	31.0%	31.0%
Yellow Time (s)	4.3	4.0	4.3	4.3	4.3
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.0	6.3	6.3	6.3
Lead/Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?					
Recall Mode	C-Max	None	C-Max	None	None
v/c Ratio	0.70	0.97	0.14	0.95	0.09
Control Delay	38.4	42.9	6.9	71.4	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	38.4	42.9	6.9	71.4	0.4
Queue Length 50th (ft)	132	281	54	260	0
Queue Length 95th (ft)	204	#592	63	130	0
Internal Link Dist (ft)	563		559	412	
Turn Bay Length (ft)	411	784	1172	438	467
Base Capacity (vph)	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.70	0.95	0.14	0.95	0.09

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 32 (32%), Referenced to phase 2 EBT and 6 WBT. Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	



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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Traffic Volume (vph)	0	96	110	723	151	0	0	0	0	333	3	22
Future Volume (vph)	0	96	110	723	151	0	0	0	0	333	3	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1712	1712	1712	1712	1712	1712	1712	1712	1712	1712	1712	1712
Flt Permitted	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1712	1712	1712	1712	1712	1712	1712	1712	1712	1712	1712	1712
Peak-hour factor, PHF	0.92	0.84	0.64	0.97	0.90	0.92	0.92	0.92	0.92	0.82	0.38	0.50
Adj. Flow (vph)	0	114	172	745	168	0	0	0	0	406	8	44
RTOR Reduction (vph)	0	54	0	0	0	0	0	0	0	0	0	33
Lane Group Flow (vph)	0	232	0	745	168	0	0	0	0	0	0	414
Turn Type	NA	NA	pm+pt	NA	NA	NA	NA	NA	NA	NA	NA	NA
Protected Phases	2	2	1	6	6	6	6	6	6	4	4	4
Permitted Phases	6	6	6	6	6	6	6	6	6	4	4	4
Actuated Green, G (s)	20.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	24.5	24.5	24.5
Effective Green, g (s)	20.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	24.5	24.5	24.5
Actuated g/C Ratio	0.21	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.24	0.24	0.24
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Vehicle Extension (s)	5.0	5.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0	3.0	3.0
Lane Grp Cap (vph)	357	770	1171	770	1171	770	1171	770	1171	435	387	387
v/s Ratio Prot	0.14	c0.35	0.09	c0.26	c0.26	c0.26	c0.26	c0.26	c0.26	0.23	0.01	0.01
v/c Ratio	0.65	0.97	0.14	0.97	0.90	0.92	0.92	0.92	0.92	0.95	0.03	0.03
Uniform Delay, d1	36.2	20.5	7.6	20.5	7.6	20.5	7.6	20.5	7.6	37.2	28.7	28.7
Progression Factor	1.00	0.89	0.86	0.89	0.86	0.89	0.86	0.89	0.86	1.00	1.00	1.00
Incremental Delay, d2	8.9	23.9	0.2	23.9	0.2	23.9	0.2	23.9	0.2	31.0	0.0	0.0
Delay (s)	45.1	42.0	6.8	42.0	6.8	42.0	6.8	42.0	6.8	68.1	28.7	28.7
Level of Service	D	D	A	D	A	D	A	D	A	E	C	C
Approach Delay (s)	45.1	35.6	0.0	35.6	0.0	35.6	0.0	35.6	0.0	64.3	E	E
Approach LOS	D	D	A	D	A	D	A	D	A	E	E	E

Intersection Summary				
HCM 2000 Control Delay		45.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio		1.00		
Actuated Cycle Length (s)		100.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization		69.4%	ICU Level of Service	C
Analysis Period (min)		15		
c Critical Lane Group				

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Queues
2: I-575 NB Ramps & Ridgewalk Pkwy

HCM Signalized Intersection Capacity Analysis
2: I-575 NB Ramps & Ridgewalk Pkwy

No-Build SAT Improved
1/20/2016

Movement	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Traffic Volume (vph)	28	405	814	277	0	874	0	0	0
Future Volume (vph)	28	405	814	277	0	874	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583	1770	1583	1770
Flt Permitted	0.31	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	581	1863	3539	1583	1770	1583	1770	1583	1770
Peak-hour factor, PHF	0.69	0.94	0.92	0.92	0.87	0.92	0.90	0.92	0.92
Adj. Flow (vph)	41	431	0	0	895	318	93	0	0
RTOR Reduction (vph)	0	0	0	0	70	0	0	0	0
Lane Group Flow (vph)	41	431	0	0	895	248	0	93	971
Turn Type	Perm	NA	NA	NA	Perm	NA	Free	NA	Free
Protected Phases	2	2	6	6	8	8	Free	Free	Free
Permitted Phases	2	2	6	6	8	8	Free	Free	Free
Actuated Green, G (s)	78.1	78.1	78.1	78.1	78.1	78.1	93	100.0	100.0
Effective Green, g (s)	78.1	78.1	78.1	78.1	78.1	78.1	93	100.0	100.0
Actuated g/C Ratio	0.78	0.78	0.78	0.78	0.78	0.78	0.09	1.00	1.00
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	3.0	3.0
Lane Grp Cap (vph)	453	1455	2763	1236	164	1583	1583	1583	1583
v/s Ratio Prot	0.07	0.23	0.25	0.16	0.05	0.05	c0.61	0.61	0.61
v/s Ratio Perm	0.09	0.30	0.32	0.20	0.57	0.57	0.61	0.61	0.61
v/c Ratio	2.6	3.1	3.2	2.8	43.4	43.4	0.0	0.0	0.0
Uniform Delay, d1	0.68	0.81	1.23	1.92	1.00	1.00	1.00	1.00	1.00
Progression Factor	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Incremental Delay, d2	1.9	2.8	4.1	5.7	47.9	47.9	1.8	1.8	1.8
Delay (s)	A	A	A	A	D	D	A	A	A
Level of Service	A	A	A	A	D	D	A	A	A
Approach Delay (s)	2.7	4.5	4.5	4.5	5.8	5.8	0.0	0.0	0.0
Approach LOS	A	A	A	A	A	A	A	A	A
Intersection Summary									
HCM 2000 Control Delay	4.7								
HCM 2000 Volume to Capacity ratio	0.70								
Actuated Cycle Length (s)	100.0								
Intersection Capacity Utilization	69.4%								
Analysis Period (min)	15								
c Critical Lane Group									

Queues
2: I-575 NB Ramps & Ridgewalk Pkwy

HCM Signalized Intersection Capacity Analysis
2: I-575 NB Ramps & Ridgewalk Pkwy

No-Build SAT Improved
1/20/2016

Movement	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Traffic Volume (vph)	28	405	814	277	0	874	0	0	0
Future Volume (vph)	28	405	814	277	0	874	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583	1770	1583	1770
Flt Permitted	0.31	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	581	1863	3539	1583	1770	1583	1770	1583	1770
Peak-hour factor, PHF	0.69	0.94	0.92	0.92	0.87	0.92	0.90	0.92	0.92
Adj. Flow (vph)	41	431	0	0	895	318	93	0	0
RTOR Reduction (vph)	0	0	0	0	70	0	0	0	0
Lane Group Flow (vph)	41	431	0	0	895	248	0	93	971
Turn Type	Perm	NA	NA	NA	Perm	NA	Free	NA	Free
Protected Phases	2	2	6	6	8	8	Free	Free	Free
Permitted Phases	2	2	6	6	8	8	Free	Free	Free
Actuated Green, G (s)	78.1	78.1	78.1	78.1	78.1	78.1	93	100.0	100.0
Effective Green, g (s)	78.1	78.1	78.1	78.1	78.1	78.1	93	100.0	100.0
Actuated g/C Ratio	0.78	0.78	0.78	0.78	0.78	0.78	0.09	1.00	1.00
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	3.0	3.0
Lane Grp Cap (vph)	453	1455	2763	1236	164	1583	1583	1583	1583
v/s Ratio Prot	0.07	0.23	0.25	0.16	0.05	0.05	c0.61	0.61	0.61
v/s Ratio Perm	0.09	0.30	0.32	0.20	0.57	0.57	0.61	0.61	0.61
v/c Ratio	2.6	3.1	3.2	2.8	43.4	43.4	0.0	0.0	0.0
Uniform Delay, d1	0.68	0.81	1.23	1.92	1.00	1.00	1.00	1.00	1.00
Progression Factor	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Incremental Delay, d2	1.9	2.8	4.1	5.7	47.9	47.9	1.8	1.8	1.8
Delay (s)	A	A	A	A	D	D	A	A	A
Level of Service	A	A	A	A	D	D	A	A	A
Approach Delay (s)	2.7	4.5	4.5	4.5	5.8	5.8	0.0	0.0	0.0
Approach LOS	A	A	A	A	A	A	A	A	A
Intersection Summary									
HCM 2000 Control Delay	4.7								
HCM 2000 Volume to Capacity ratio	0.70								
Actuated Cycle Length (s)	100.0								
Intersection Capacity Utilization	69.4%								
Analysis Period (min)	15								
c Critical Lane Group									

Queues
2: I-575 NB Ramps & Ridgewalk Pkwy

HCM Signalized Intersection Capacity Analysis
2: I-575 NB Ramps & Ridgewalk Pkwy

No-Build SAT Improved
1/20/2016

Movement	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Traffic Volume (vph)	28	405	814	277	0	874	0	0	0
Future Volume (vph)	28	405	814	277	0	874	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583	1770	1583	1770
Flt Permitted	0.31	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	581	1863	3539	1583	1770	1583	1770	1583	1770
Peak-hour factor, PHF	0.69	0.94	0.92	0.92	0.87	0.92	0.90	0.92	0.92
Adj. Flow (vph)	41	431	0	0	895	318	93	0	0
RTOR Reduction (vph)	0	0	0	0	70	0	0	0	0
Lane Group Flow (vph)	41	431	0	0	895	248	0	93	971
Turn Type	Perm	NA	NA	NA	Perm	NA	Free	NA	Free
Protected Phases	2	2	6	6	8	8	Free	Free	Free
Permitted Phases	2	2	6	6	8	8	Free	Free	Free
Actuated Green, G (s)	78.1	78.1	78.1	78.1	78.1	78.1	93	100.0	100.0
Effective Green, g (s)	78.1	78.1	78.1	78.1	78.1	78.1	93	100.0	100.0
Actuated g/C Ratio	0.78	0.78	0.78	0.78	0.78	0.78	0.09	1.00	1.00
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	3.0	3.0
Lane Grp Cap (vph)	453	1455	2763	1236	164	1583	1583	1583	1583
v/s Ratio Prot	0.07	0.23	0.25	0.16	0.05	0.05	c0.61	0.61	0.61
v/s Ratio Perm	0.09	0.30	0.32	0.20	0.57	0.57	0.61	0.61	0.61
v/c Ratio	2.6	3.1	3.2	2.8	43.4	43.4	0.0	0.0	0.0
Uniform Delay, d1	0.68	0.81	1.23	1.92	1.00	1.00	1.00	1.00	1.00
Progression Factor	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Incremental Delay, d2	1.9	2.8	4.1	5.7	47.9	47.9	1.8	1.8	1.8
Delay (s)	A	A	A	A	D	D	A	A	A
Level of Service	A	A	A	A	D	D	A	A	A
Approach Delay (s)	2.7	4.5	4.5	4.5	5.8	5.8	0.0	0.0	0.0
Approach LOS	A	A	A	A	A	A	A	A	A
Intersection Summary									
HCM 2000 Control Delay	4.7								
HCM 2000 Volume to Capacity ratio	0.70								
Actuated Cycle Length (s)	100.0								
Intersection Capacity Utilization	69.4%								
Analysis Period (min)	15								
c Critical Lane Group									

Queues
2: I-575 NB Ramps & Ridgewalk Pkwy

HCM Signalized Intersection Capacity Analysis
2: I-575 NB Ramps & Ridgewalk Pkwy

No-Build SAT Improved
1/20/2016

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations						
Traffic Volume (vph)	28	405	814	277	0	874
Future Volume (vph)	28	405	814	277	0	874
Lane Group Flow (vph)	41	431	895	318	93	971
Turn Type	Perm	NA	NA	Perm	NA	Free
Protected Phases						
Permitted Phases	2	2	6	6	8	Free
Detector Phase	2	2	6	6	8	Free
Switch Phase						
Minimum Initial (s)	150	150	60	60	5.7	
Minimum Split (s)	220	220	220	220	120	
Total Split (s)	71.0	71.0	71.0	71.0	29.0	
Total Split (%)	71.0%	71.0%	71.0%	71.0%	29.0%	
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	
All-Red Time (s)	20	20	20	20	20	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	
Lead-Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
o/c Ratio	0.09	0.29	0.31	0.24	0.50	0.61
Control Delay	2.6	3.2	4.6	1.2	50.5	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.6	3.2	4.6	1.2	50.5	1.8
Queue Length 50th (ft)	5	52	92	6	57	0
Queue Length 95th (ft)	m6	m64	m125	m17	103	0
Internal Link Dist (ft)		559	534		615	
Turn Bay Length (ft)	420			225		
Base Capacity (vph)	468	1502	2853	1338	401	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillover Cap Reductn	0	0	68	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.29	0.32	0.24	0.23	0.61
Intersection Summary						
Cycle Length: 100						
Actuated Cycle Length: 100						
Offset: 75 (75%), Referenced to phase 2EBTL and 6WBTL, Start of Green						
Natural Cycle: 40						
Control Type: Actuated-Coordinated						
m Volume for 95th percentile queue is metered by upstream signal.						
Splits and Phases: 2: L575 NB Ramps & Ridgeway Pkwy						
        						

Queues
4: Woodstock Pkwy/Meridian Dr & Ridgeway Pkwy

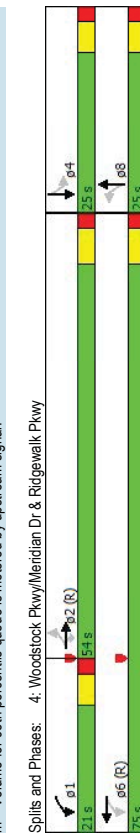
HCM Signalized Intersection Capacity Analysis
4: Woodstock Pkwy/Meridian Dr & Ridgeway Pkwy

No-Build SAT Improved
1/20/2016

No-Build SAT Improved
1/20/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	12	587	55	149	641	53	2	7	2
Traffic Volume (vph)	12	587	55	149	641	53	2	7	2
Future Volume (vph)	12	587	55	149	641	53	2	7	2
Ideal Flow (vphpl)	17	691	75	164	708	62	126	0	22
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	2	2	2	2	2	2
Permitted Phases	2	2	2	2	2	2	2	2	2
Detector Phase	2	2	2	2	2	2	2	2	2
Switch Phase	2	2	2	2	2	2	2	2	2
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	6.4	6.4	6.0	6.0
Minimum Split (s)	22.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Minimum Split (%)	54.0	54.0	54.0	21.0	75.0	25.0	25.0	25.0	25.0
Total Split (%)	54.0	54.0	54.0	21.0	75.0	25.0	25.0	25.0	25.0
Yellow Time (s)	4.3	4.3	4.3	3.6	4.3	3.6	3.6	3.6	3.6
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.04	0.30	0.07	0.28	0.26	0.45	0.47	0.14	0.14
Control Delay	3.5	3.4	0.1	2.9	2.0	51.5	15.0	30.2	30.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.5	3.4	0.1	2.9	2.0	51.5	15.0	30.2	30.2
Queue Length 50th (ft)	1	34	0	11	27	38	5	8	8
Queue Length 95th (ft)	m3	m40	m0	18	33	73	0	14	14
Internal Link Dist (ft)	686	110	90	555	187	531	144	144	144
Turn Bay Length (ft)	459	2283	1053	677	2759	268	405	293	293
Base Capacity (vph)	0	0	0	0	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.30	0.07	0.24	0.26	0.23	0.31	0.08	0.08

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 3 (s), Referenced to phase 2EBTL and 6:WBTL, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
m Volume for 95th percentile queue is metered by upstream signal.	



Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	12	587	55	149	641	53	2	109	7
Traffic Volume (vph)	12	587	55	149	641	53	2	109	7
Future Volume (vph)	12	587	55	149	641	53	2	109	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Fit Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.98	0.98
Satd. Flow (prot)	1770	3539	1583	1770	3536	1770	1601	1725	1725
Fit Permitted	0.38	1.00	1.00	0.34	1.00	0.74	1.00	0.84	0.84
Satd. Flow (perm)	712	3539	1583	639	3536	1384	1601	1474	1474
Peak-hour factor, PHF	0.69	0.85	0.73	0.91	0.91	0.25	0.86	0.25	0.75
Adj. Flow (vph)	17	691	75	164	704	4	62	8	118
RTOR Reduction (vph)	0	0	27	0	0	0	106	0	0
Lane Group Flow (vph)	17	691	48	164	708	0	62	20	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	2	2	2	2	2	2
Permitted Phases	2	2	2	2	2	2	2	2	2
Actuated Green, G (s)	64.5	64.5	64.5	78.0	78.0	10.1	10.1	10.1	10.1
Effective Green, g (s)	64.5	64.5	64.5	78.0	78.0	10.1	10.1	10.1	10.1
Actuated g/C Ratio	0.64	0.64	0.64	0.78	0.78	0.10	0.10	0.10	0.10
Clearance Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Vehicle Extension (s)	5.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	459	2282	1021	587	2758	139	161	148	148
v/s Ratio Prot	0.02	0.03	0.03	0.02	0.02	0.04	0.01	0.01	0.01
v/s Ratio Perm	0.04	0.30	0.05	0.28	0.26	0.45	0.12	0.09	0.09
Uniform Delay, d1	6.5	7.8	6.5	3.1	3.0	42.3	40.9	40.8	40.8
Progression Factor	0.42	0.38	0.00	0.62	0.55	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2	0.1	0.3	0.2	2.3	0.3	0.3	0.3
Delay (s)	2.8	3.2	0.1	2.2	1.9	44.6	41.3	41.1	41.1
Level of Service	A	A	A	A	A	D	D	D	D
Approach Delay (s)	2.9	A	A	1.9	A	42.4	A	41.1	A
Approach LOS	A	A	A	A	A	D	D	D	D

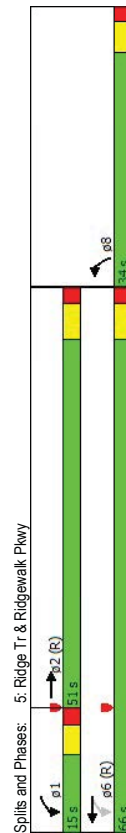
Intersection Summary	
HCM 2000 Control Delay	6.9
HCM 2000 Volume to Capacity ratio	0.33
Actuated Cycle Length (s)	100.0
Intersection Capacity Utilization	52.7%
Analysis Period (min)	15
c Critical Lane Group	

Queues
5: Ridge Tr & Ridgewalk Pkwy

No-Build SAT Improved
1/20/2016

Lane Group	EBT	WBL	WBT	NBL
Lane Configurations	↑↑	↑	↑↑	↑
Traffic Volume (vph)	565	52	649	132
Future Volume (vph)	565	52	649	132
Lane Group Flow (vph)	811	88	738	219
Turn Type	NA	pm+pt	NA	Prot
Protected Phases	2	1	6	8
Permitted Phases	6			
Detector Phase	2	1	6	8
Switch Phase				
Minimum Initial (s)	15.0	5.0	15.0	6.0
Minimum Split (s)	22.0	11.0	22.0	12.0
Total Split (%)	51.0	15.0	66.0	34.0
Total Split (%)	51.0%	15.0%	66.0%	34.0%
Yellow Time (s)	4.3	3.6	4.3	3.6
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	5.6	6.3	5.6
Lead/Lag	Lag	Lead		
Lead-Lag Optimize?				
Recall Mode	C-Max	None	C-Max	None
v/c Ratio	0.39	0.19	0.29	0.71
Control Delay	5.1	6.4	6.3	48.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.1	6.4	6.3	48.2
Queue Length 50th (ft)	55	14	72	123
Queue Length 95th (ft)	189	25	124	159
Internal Link Dist (ft)	483		884	282
Turn Bay Length (ft)	100			
Base Capacity (vph)	2083	493	2513	504
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.39	0.18	0.29	0.43

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 33 (33%), Referenced to phase 2 EBT and 6 WBT. Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated



HCM Signalized Intersection Capacity Analysis
5: Ridge Tr & Ridgewalk Pkwy

No-Build SAT Improved
1/20/2016

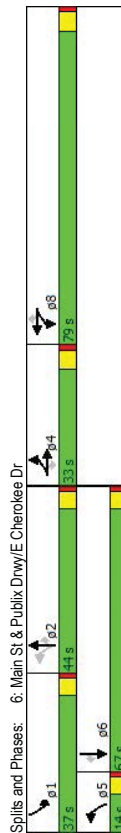
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕↕		↕	↕↕	↕	
Traffic Volume (vph)	565	146	52	649	132	36
Future Volume (vph)	565	146	52	649	132	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3		5.6	6.3	5.6	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frt	0.96		1.00	1.00	0.97	
Flt Protected	1.00		0.95	1.00	0.96	
Satd. Flow (prot)	3406		1770	3539	1737	
Flt Permitted	1.00		0.28	1.00	0.96	
Satd. Flow (perm)	3406		526	3539	1737	
Peak-hour factor, PHF	0.93	0.72	0.59	0.88	0.79	0.69
Adj. Flow (vph)	608	203	88	738	167	52
RTOR Reduction (vph)	24	0	0	0	13	0
Lane Group Flow (vph)	787	0	88	738	206	0
Turn Type	NA		pm+pt	NA	Prot	
Protected Phases	2	1	6	8		
Permitted Phases			6			
Actuated Green, G (s)	59.4		71.0	71.0	17.1	
Effective Green, g (s)	59.4		71.0	71.0	17.1	
Actuated g/C Ratio	0.59		0.71	0.71	0.17	
Clearance Time (s)	6.3		5.6	6.3	5.6	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	2023		448	2512	297	
v/s Ratio Prot	c0.23		0.01	c0.21	c0.12	
v/s Ratio Perm			0.13			
v/c Ratio	0.39		0.20	0.29	0.69	
Uniform Delay, d1	10.7		5.2	5.3	39.0	
Progression Factor	0.41		1.09	1.03	1.00	
Incremental Delay, d2	0.5		0.2	0.2	6.8	
Delay (s)	5.0		5.9	5.7	45.8	
Level of Service	A		A	A	D	
Approach Delay (s)	5.0			5.7	45.8	
Approach LOS	A			A	D	
Intersection Summary						
HCM 2000 Control Delay			10.1		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.46			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	17.5
Intersection Capacity Utilization			48.5%		ICU Level of Service	A
Analysis Period (min)			15			
Critical Lane Group						

Queues
6: Main St & Publix Drwy/E Cherokee Dr

No-Build SAT Improved
1/20/2016

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4
Traffic Volume (vph)	59	59	428	62	269	76	241	340	315
Future Volume (vph)	59	59	428	62	269	76	241	340	315
Ideal Flow (vphpl)	142	94	279	279	292	84	280	362	354
Turn Type	NA	Perm	Split	NA	Perm	pm-pt	NA	Perm	NA
Protected Phases	4	4	8	8	8	5	2	2	1
Permitted Phases	4	4	8	8	8	5	2	2	1
Detector Phase	4	4	8	8	8	5	2	2	1
Switch Phase	4	4	8	8	8	5	2	2	1
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	15.0	15.0	8.0	15.0
Minimum Split (s)	27.5	27.5	27.5	27.5	14.0	26.0	26.0	14.0	32.0
Total Split (s)	33.0	33.0	79.0	79.0	79.0	44.0	44.0	37.0	67.0
Total Split (%)	17.1%	17.1%	40.9%	40.9%	40.9%	22.8%	22.8%	19.2%	34.7%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	5.5
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					None	None	Min	None	Min
Recall Mode	None	None	None	None	None	Min	Min	None	Min
v/c Ratio	0.55	0.30	0.66	0.65	0.47	0.22	0.70	0.60	0.61
Control Delay	55.9	10.4	46.6	45.9	7.0	23.0	52.0	11.2	49.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Length	55.9	10.4	46.6	45.9	7.0	23.0	52.0	11.2	49.2
Queue Length 50th (ft)	88	0	172	171	0	32	173	17	111
Queue Length 95th (ft)	186	3	357	247	73	81	329	121	291
Internal Link Dist (ft)	33		935			546		494	
Turn Bay Length (ft)			650		300	100		255	330
Base Capacity (vph)	486	500	1215	1238	1225	398	710	808	1087
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.19	0.23	0.23	0.24	0.21	0.39	0.45	0.33

Intersection Summary	
Cycle Length: 183	
Actuated Cycle Length: 107.4	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	



HCM Signalized Intersection Capacity Analysis
6: Main St & Publix Drwy/E Cherokee Dr

No-Build SAT Improved
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4
Traffic Volume (vph)	52	59	59	428	62	269	76	241	340	315
Future Volume (vph)	52	59	59	428	62	269	76	241	340	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	5.5
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00
Flt	1.00	0.85	1.00	0.95	1.00	0.85	1.00	1.00	0.85	1.00
Flt Protected	0.98	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1817	1583	1681	1713	1583	1770	1863	1583	1863	1583
Flt Permitted	0.98	1.00	0.95	0.97	1.00	0.59	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1817	1583	1681	1713	1583	1097	1863	1583	1863	1583
Peak-hour factor, PHF	0.73	0.83	0.63	0.92	0.67	0.92	0.91	0.86	0.94	0.89
Adj. Flow (vph)	71	71	94	465	93	292	84	280	362	278
RTOR Reduction (vph)	0	0	80	0	0	218	0	0	259	0
Lane Group Flow (vph)	0	142	14	279	279	74	84	280	103	354
Turn Type	Split	NA	Perm	Split	NA	Perm	pm-pt	NA	Perm	Prot
Protected Phases	4	4	4	8	8	5	2	2	1	6
Permitted Phases	4	4	4	8	8	5	2	2	1	6
Actuated Green, G (s)	15.3	15.3	27.0	27.0	27.0	32.1	23.0	23.0	18.2	32.1
Effective Green, g (s)	15.3	15.3	27.0	27.0	27.0	32.1	23.0	23.0	18.2	32.1
Actuated g/C Ratio	0.14	0.14	0.25	0.25	0.25	0.30	0.22	0.22	0.17	0.30
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.5	5.0	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	262	228	428	436	403	389	404	343	589	564
v/s Ratio Prot	c0.08		c0.17	0.16		0.02	c0.15		c0.10	0.15
v/s Ratio Perm		0.01		0.05		0.05		0.06		0.01
v/c Ratio	0.54	0.06	0.65	0.64	0.18	0.22	0.69	0.30	0.60	0.49
Uniform Delay, d1	42.1	39.1	35.3	35.2	30.9	27.0	38.2	34.8	40.5	30.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.1	3.5	3.1	0.2	0.3	6.4	1.0	1.7	1.4
Delay (s)	44.4	39.3	38.8	38.3	31.1	27.3	44.7	35.8	42.3	31.7
Level of Service	D	D	D	D	C	C	D	D	D	C
Approach Delay (s)	42.3			36.0					37.1	
Approach LOS	D			D			D		D	

Intersection Summary	
HCM 2000 Control Delay	37.5
HCM 2000 Volume to Capacity ratio	0.63
Actuated Cycle Length (s)	106.0
Intersection Capacity Utilization	55.6%
Analysis Period (min)	15
c Critical Lane Group	

HCM Unsignalized Intersection Capacity Analysis 7: Main St & Rope Mill Rd/E Main St

HCM Unsignalized Intersection Capacity Analysis 8: Woodstock Pkwy & Outlet Shopping Drwy/Rope Mill Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	0	110	19	2	0	81	339	18	1	444	15
Future Volume (veh/h)	8	0	110	19	2	0	81	339	18	1	444	15
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
Grade	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.58	0.25	0.81	0.47	0.50	0.92	0.55	0.85	0.57	0.25	0.92	0.70
Hourly flow rate (vph)	14	0	136	40	4	0	147	399	32	4	483	21
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None				None
Median storage (veh)												
Upstream signal (ft)												
pX platoon unblocked												
VC, conflicting volume	1212	1226	494	1346	1221	415	504					431
VC1, stage 1 conf vol												
VC2, stage 2 conf vol												
VCu, unblocked vol	1212	1226	494	1346	1221	415	504					431
IC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1					4.1
IC, 2 stage (s)												
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2					2.2
p0 queue free %	90	100	76	54	97	100	86					100
CM capacity (veh/h)	139	153	576	87	154	637	1061					1129
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	150	44	578	508								
Volume Left	14	40	147	4								
Volume Right	136	0	32	21								
cSH	445	91	1061	1129								
Volume to Capacity	0.34	0.48	0.14	0.00								
Queue Length 95th (ft)	37	52	12	0								
Control Delay (s)	17.2	77.1	3.5	0.1								
Lane LOS	C	F	A	A								
Approach Delay (s)	17.2	77.1	3.5	0.1								
Approach LOS	C	F										
Intersection Summary												
Average Delay												6.3
Intersection Capacity Utilization												65.6%
Analysis Period (min)												15
												ICU Level of Service
												C

1/19/2016 Baseline

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HCM Unsignalized Intersection Capacity Analysis 8: Woodstock Pkwy & Outlet Shopping Drwy/Rope Mill Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	52	49	100	18	31	39	107	77	30	32	33	18
Future Volume (veh/h)	52	49	100	18	31	39	107	77	30	32	33	18
Peak Hour Factor	0.59	0.50	0.81	0.80	0.78	0.73	0.84	0.83	0.68	0.81	0.75	0.57
Hourly flow rate (vph)	88	98	123	23	40	53	127	93	44	40	44	32
Approach Volume (veh/h)			309		116			264				116
Crossing Volume (veh/h)			107		308			226				190
High Capacity (veh/h)			1274		1087			1160				1193
High v/c (veh/h)			0.24		0.11			0.23				0.10
Low Capacity (veh/h)			1060		892			957				988
Low v/c (veh/h)			0.29		0.13			0.28				0.12
Intersection Summary												
Maximum v/c High								0.24				
Maximum v/c Low								0.29				
Intersection Capacity Utilization								40.7%				A
								ICU Level of Service				

1/19/2016 Baseline

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Queues
9: Main St & Ridgewalk Pkwy

HCM Signalized Intersection Capacity Analysis
9: Main St & Ridgewalk Pkwy

No-Build SAT Improved
1/20/2016

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	475	116	116	245	335	577
Future Volume (vph)	475	116	116	245	335	577
Lane Volume Flow (vph)	546	145	132	272	376	656
Turn Type	Prot	Perm	pm-pt	NA	NA	Perm
Protected Phases	4	4	6	2	2	2
Permitted Phases	4	4	1	6	2	2
Detector Phase	4	4	1	6	2	2
Switch Phase	4	4	1	6	2	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	10.0	22.0	22.0	22.0
Total Split (s)	48.0	46.0	10.0	54.0	44.0	44.0
Total Split (%)	46.0%	46.0%	10.0%	54.0%	44.0%	44.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	None	None	None	C-Max	C-Max	C-Max
Recall Mode	None	None	None	C-Max	C-Max	C-Max
v/c Ratio	0.87	0.22	0.32	0.28	0.50	0.68
Control Delay	28.9	0.8	16.0	15.2	25.7	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	0.8	16.0	15.2	25.7	8.6
Queue Length 50th (ft)	220	0	43	95	183	46
Queue Length 95th (ft)	92	0	79	159	270	153
Internal Link Dist (ft)	1155		596	714		
Turn Bay Length (ft)	177					
Base Capacity (vph)	708	720	416	981	759	969
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.20	0.32	0.28	0.50	0.68

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 19 (19%), Referenced to phase 2, SBT and 6, NBT, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	



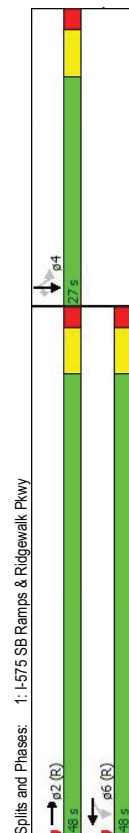
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	475	116	116	245	335	577
Future Volume (vph)	475	116	116	245	335	577
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583
Peak-hour factor, PHF	0.87	0.80	0.88	0.90	0.89	0.88
Adj. Flow (vph)	546	145	132	272	376	656
RTOR Reduction (vph)	0	94	0	0	0	324
Lane Group Flow (vph)	546	51	132	272	376	332
Turn Type	Prot	Perm	pm-pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases	4		6		2	
Actuated Green, G (s)	35.3	35.3	52.7	52.7	40.8	40.8
Effective Green, g (s)	35.3	35.3	52.7	52.7	40.8	40.8
Actuated g/C Ratio	0.35	0.35	0.53	0.53	0.41	0.41
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	5.0	5.0	5.0
Lane Grp Cap (vph)	624	558	417	981	760	645
v/s Ratio Prot	c0.31		0.02	c0.15	0.20	
v/s Ratio Perm		0.03	0.15			c0.21
v/c Ratio	0.88	0.09	0.32	0.28	0.49	0.52
Uniform Delay, d1	30.3	21.6	13.5	13.1	22.0	22.2
Progression Factor	0.46	0.02	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.4	0.1	0.4	0.7	2.3	2.9
Delay (s)	26.3	0.6	13.9	13.8	24.3	25.1
Level of Service	C	A	B	B	C	C
Approach Delay (s)	20.9		13.8	24.8		
Approach LOS	C		B	C		

Intersection Summary			
HCM 2000 Control Delay	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Future “Build” Intersections Analysis

Queues Build AM 1/20/2016 1: I-575 SB Ramps & Ridgewalk Pkwy

	EBT	WBL	WBT	SBT	SBR
Lane Group					
Lane Configurations	EB	WB	WB	SB	SB
Traffic Volume (vph)	190	546	105	3	26
Future Volume (vph)	190	546	105	3	26
Lane Group Flow (vph)	467	650	146	575	43
Turn Type	NA	Perm	NA	Perm	Perm
Protected Phases	2	6	6	4	4
Permitted Phases	2	6	6	4	4
Detector Phase	2	6	6	4	4
Switch Phase					
Minimum Initial (s)	15.0	15.0	15.0	6.0	6.0
Minimum Split (s)	21.3	22.0	22.0	13.0	13.0
Total Split (%)	48.0	48.0	48.0	27.0	27.0
Total Split (%)	64.0%	64.0%	64.0%	36.0%	36.0%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	C-Max	C-Max	C-Max	None	None
v/c Ratio	0.46	1.46	0.14	1.18	0.09
Control Delay	98	237.2	4.0	127.1	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	98	237.2	4.0	127.1	6.7
Queue Length 50th (ft)	95	~437	21	~326	0
Queue Length 95th (ft)	111	#555	14	132	8
Internal Link Dist (ft)	563	559	412		
Turn Bay Length (ft)					
Base Capacity (vph)	1011	446	1035	489	471
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.46	1.46	0.14	1.18	0.09
Intersection Summary					
Cycle Length: 75					
Actuated Cycle Length: 75					
Offset: 67 (89%), Referenced to phase 2 EBT and 6:WBTL Start of Green					
Natural Cycle: 140					
Control Type: Actuated-Coordinated					
Volume exceeds capacity, queue is theoretically infinite.					
Queue shown is maximum after two cycles.					
# 95th percentile volume exceeds capacity, queue may be longer.					
Queue shown is maximum after two cycles.					

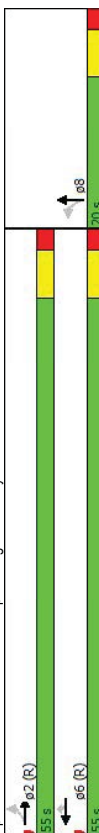


HCM Signalized Intersection Capacity Analysis Build AM 1/20/2016 1: I-575 SB Ramps & Ridgewalk Pkwy

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Traffic Volume (vph)	0	190	152	546	105	0	0	0	0	482	3	26
Future Volume (vph)	0	190	152	546	105	0	0	0	0	482	3	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1753	1753	1753	1770	1863	1753	1753	1753	1753	1775	1583	1583
Flt Permitted	1.00	1.00	1.00	0.43	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1753	1753	1753	803	1863	1753	1753	1753	1753	1775	1583	1583
Peak-hour factor, PHF	0.92	0.72	0.75	0.84	0.72	0.92	0.92	0.92	0.92	0.85	0.38	0.60
Adj. Flow (vph)	0	264	203	650	146	0	0	0	0	567	8	43
RTOR Reduction (vph)	0	37	0	0	0	0	0	0	0	0	0	31
Lane Group Flow (vph)	0	430	0	650	146	0	0	0	0	0	0	12
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases	2	6	6	4	4	4	4	4	4	4	4	4
Permitted Phases	2	6	6	4	4	4	4	4	4	4	4	4
Actuated Green, G (s)	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	20.7	20.7	20.7
Effective Green, g (s)	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	20.7	20.7	20.7
Actuated g/c Ratio	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.28	0.28	0.28
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0	3.0	3.0
Lane Grp Cap (vph)	974	446	1035	489	471	489	489	489	489	489	489	489
v/s Ratio Prot	0.25	0.25	0.25	0.08	0.08	0.08	0.08	0.08	0.08	0.32	0.01	0.01
v/s Ratio Perm	0.44	0.44	0.44	1.46	1.46	1.46	1.46	1.46	1.46	1.18	0.03	0.03
v/c Ratio	0.44	1.46	0.14	1.18	1.18	1.18	1.18	1.18	1.18	1.18	0.03	0.03
Uniform Delay, d1	9.8	9.8	9.8	16.6	8.0	16.6	16.6	16.6	16.6	27.1	19.8	19.8
Progression Factor	1.00	1.00	1.00	0.82	0.46	0.82	0.82	0.82	0.82	1.00	1.00	1.00
Incremental Delay, d2	1.5	1.5	1.5	217.8	0.3	217.8	217.8	217.8	217.8	98.8	0.0	0.0
Delay (s)	11.3	11.3	11.3	231.4	4.0	231.4	231.4	231.4	231.4	126.0	19.8	19.8
Level of Service	B	B	B	F	A	F	F	F	F	F	F	F
Approach Delay (s)	11.3	11.3	11.3	189.6	0.0	189.6	189.6	189.6	189.6	118.6	118.6	118.6
Approach LOS	B	B	B	F	A	F	F	F	F	F	F	F
Intersection Summary												
HCM 2000 Control Delay				122.0	HCM 2000 Level of Service					F		
HCM 2000 Volume to Capacity ratio				1.36								
Actuated Cycle Length (s)				75.0	Sum of lost time (s)					12.6		
Intersection Capacity Utilization				78.6%	ICU Level of Service					D		
Analysis Period (min)				15								
c Critical Lane Group												

Queues 2: I-575 NB Ramps & Ridgewalk Pkwy Build AM 1/20/2016

	EBL	EBT	WBT	WBR	NBT	NBR	
Lane Group	EBL	EBT	WBT	WBR	NBT	NBR	
Lane Configurations	47	621	603	254	0	503	
Traffic Volume (vph)	47	621	603	254	0	503	
Future Volume (vph)	47	621	603	254	0	503	
Volume Flow (vph)	65	661	735	310	57	572	
Turn Type	Perm	NA	NA	Perm	NA	Free	
Protected Phases	2	2	6	6	8	Free	
Permitted Phases	2	2	6	6	8	Free	
Detector Phase	2	2	6	6	8	Free	
Switch Phase	2	2	6	6	8	Free	
Minimum Initial (s)	15.0	15.0	6.0	6.0	5.7		
Minimum Split (s)	22.0	22.0	22.0	22.0	12.0		
Minimum Split (%)	55.0	55.0	55.0	55.0	20.0		
Total Split (%)	73.3%	73.3%	73.3%	73.3%	26.7%		
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3		
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3		
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	None	
v/c Ratio	0.11	0.43	0.25	0.23	0.30	0.36	
Control Delay	1.1	1.5	1.2	0.5	34.6	0.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	1.1	1.5	1.2	0.5	34.6	0.6	
Queue Length 50th (ft)	2	24	10	0	25	0	
Queue Length 95th (ft)	m3	m28	25	2	56	0	
Internal Link Dist (ft)	559	534			615		
Turn Bay Length (ft)	420		225				
Base Capacity (vph)	573	1540	2925	1362	323	1583	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.11	0.43	0.25	0.23	0.18	0.36	
Intersection Summary							
Cycle Length: 75							
Actuated Cycle Length: 75							
Offset: 52 (69%), Referenced to phase 2:EBTL and 6:WBT. Start of Green							
Natural Cycle: 40							
Control Type: Actuated-Coordinated							
m Volume for 95th percentile queue is metered by upstream signal.							



HCM Signalized Intersection Capacity Analysis 2: I-575 NB Ramps & Ridgewalk Pkwy Build AM 1/20/2016

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	47	621	0	0	603	254	45	0	503	0	0	0
Traffic Volume (vph)	47	621	0	0	603	254	45	0	503	0	0	0
Future Volume (vph)	47	621	0	0	603	254	45	0	503	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3			6.3	6.3			6.3	6.3		
Lane Util. Factor	1.00	1.00			0.95	1.00			1.00	1.00		
Flt Protected	0.95	1.00			1.00	1.00			0.95	1.00		
Satd. Flow (prot)	1770	1863			3539	1583			1770	1583		
Flt Permitted	0.37	1.00			1.00	1.00			0.95	1.00		
Satd. Flow (perm)	694	1863			3539	1583			1770	1583		
Peak-hour factor, PHF	0.72	0.94	0.92	0.92	0.82	0.82	0.79	0.92	0.88	0.92	0.92	0.92
Adj. Flow (vph)	65	661	0	0	735	310	57	0	572	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	74	0	0	0	0	0	0
Lane Group Flow (vph)	65	661	0	0	735	236	0	57	572	0	0	0
Turn Type	Perm	NA	NA	NA	Perm	Perm	Perm	NA	Free	NA	Free	Free
Protected Phases	2				6			8				
Permitted Phases	2				6			8				
Actuated Green, G (s)	57.0	57.0			57.0	57.0		5.4	75.0			
Effective Green, g (s)	57.0	57.0			57.0	57.0		5.4	75.0			
Actuated g/C Ratio	0.76	0.76			0.76	0.76		0.07	1.00			
Clearance Time (s)	6.3	6.3			6.3	6.3		6.3				
Vehicle Extension (s)	5.0	5.0			5.0	5.0		3.0				
Lane Grp Cap (vph)	527	1415			2689	1203		127	1583			
v/s Ratio Prot	0.35				0.21							
v/s Ratio Perm	0.09				0.15			0.03	0.36			
v/c Ratio	0.12	0.47			0.27	0.20		0.45	0.36			
Uniform Delay, d1	2.4	3.3			2.7	2.5		33.4	0.0			
Progression Factor	0.28	0.31			0.34	0.26		1.00	1.00			
Incremental Delay, d2	0.2	0.4			0.2	0.3		2.5	0.6			
Delay (s)	0.8	1.4			1.2	1.0		35.9	0.6			
Level of Service	A	A			A	A		D	A			
Approach Delay (s)	1.4				1.1			3.8				
Approach LOS	A				A			A				
Intersection Summary												
HCM 2000 Control Delay												
HCM 2000 Volume to Capacity ratio												
Actuated Cycle Length (s)												
Intersection Capacity Utilization												
Analysis Period (min)												
c Critical Lane Group												

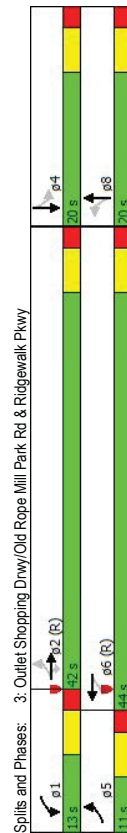
Queues

3: Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

Build AM
1/20/2016

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Traffic Volume (vph)	76	827	223	70	661	116	6	32	11
Future Volume (vph)	76	827	223	70	661	116	6	32	11
Ideal Flow (vphpl)	106	914	226	86	853	136	93	44	97
Turn Type	pm-pt	NA	Perm	pm-pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	2	1	6	8	8	4	4
Permitted Phases	2	2	2	1	6	8	8	4	4
Detector Phase	5	2	2	1	6	8	8	4	4
Switch Phase	5	2	2	1	6	8	8	4	4
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Total Split (%)	11.0	42.0	42.0	13.0	44.0	20.0	20.0	20.0	20.0
Total Split (%)	14.7%	56.0%	56.0%	17.3%	58.7%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	None	C-Max	C-Max	None	C-Max	None	None	None	None
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.25	0.49	0.25	0.22	0.44	0.67	0.29	0.22	0.30
Control Delay	4.9	8.5	0.9	5.2	8.6	45.9	12.3	29.1	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.9	8.5	0.9	5.2	8.6	45.9	12.3	29.1	12.6
Queue Length 50th (ft)	9	86	0	10	81	59	8	18	9
Queue Length 95th (ft)	17	145	6	17	98	106	0	35	12
Internal Link Dist (ft)	534			686		232			281
Turn Bay Length (ft)	275	410	268				201		
Base Capacity (vph)	424	1849	890	403	1958	241	366	242	368
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.49	0.25	0.21	0.44	0.56	0.25	0.18	0.26

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 63 (84%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	



HCM Signalized Intersection Capacity Analysis

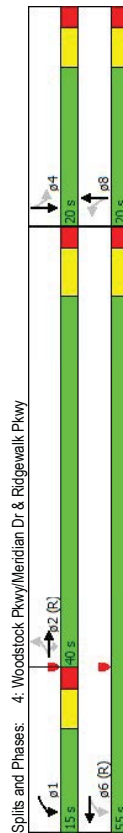
3: Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

Build AM
1/20/2016

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Traffic Volume (vph)	76	827	223	70	661	46	116	6	63	32
Future Volume (vph)	76	827	223	70	661	46	116	6	63	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	0.88	1.00	1.00	0.88
Flt	1.00	1.00	0.85	1.00	0.95	1.00	0.88	1.00	0.88	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95
Satd. Flow (prot)	1770	3376	1441	1770	3487	1770	1640	1770	1647	1770
Flt Permitted	0.29	1.00	1.00	0.24	1.00	0.69	1.00	0.70	1.00	0.70
Satd. Flow (perm)	548	3376	1441	442	3487	1293	1640	1298	1647	1298
Peak-hour factor, PHF	0.72	0.93	0.89	0.81	0.86	0.55	0.85	0.31	0.85	0.72
Adj. Flow (vph)	106	889	251	86	769	84	136	19	74	44
RTOR Reduction (vph)	0	2	106	0	10	0	62	0	0	63
Lane Group Flow (vph)	106	912	120	86	843	0	136	31	0	44
Turn Type	pm-pt	NA	Perm	pm-pt	NA	Perm	NA	Perm	NA	Perm
Protected Phases	5	2	2	1	6	8	8	4	4	4
Permitted Phases	2	2	2	1	6	8	8	4	4	4
Actuated Green, G (s)	44.3	39.8	39.8	46.1	40.7	11.8	11.8	11.8	11.8	11.8
Effective Green, g (s)	44.3	39.8	39.8	46.1	40.7	11.8	11.8	11.8	11.8	11.8
Actuated g/C Ratio	0.59	0.53	0.53	0.61	0.54	0.16	0.16	0.16	0.16	0.16
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	397	1791	764	367	1892	203	258	204	259	259
v/s Ratio Prot	0.02	c0.27	c0.02	0.24	c0.11	c0.11	c0.11	c0.03	c0.02	c0.02
v/s Ratio Perm	0.14	0.08	0.13	0.45	0.67	0.12	0.12	0.22	0.13	0.13
v/c Ratio	0.27	0.51	0.16	0.23	0.45	0.67	0.12	0.22	0.13	0.13
Uniform Delay, d1	6.8	11.3	9.0	6.4	10.3	29.8	27.1	27.6	27.2	27.2
Progression Factor	0.70	0.63	0.16	0.83	0.74	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	1.0	0.4	0.3	0.7	8.1	0.2	0.5	0.2	0.2
Delay (s)	5.2	8.1	1.8	5.6	8.4	37.9	27.3	28.1	27.4	27.4
Level of Service	A	A	A	A	A	D	C	C	C	C
Approach Delay (s)	6.7	7.6	8.1	8.1	8.1	33.6	C	27.6	C	C
Approach LOS	A	A	A	A	A	C	C	C	C	C

Intersection Summary	
HCM 2000 Control Delay	10.8
HCM 2000 Volume to Capacity ratio	0.52
Actuated Cycle Length (s)	75.0
Intersection Capacity Utilization	57.5%
Analysis Period (min)	15
c Critical Lane Group	

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	1	731	204	250	675	86	2	2	6
Traffic Volume (vph)	1	731	204	250	675	86	2	2	6
Future Volume (vph)	1	731	204	250	675	86	2	2	6
Ideal Flow (vphpl)	4	786	219	275	746	115	219	0	28
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	6	6	8	8	4	4
Permitted Phases	2	2	2	6	6	8	8	4	4
Detector Phase	2	2	2	6	6	8	8	4	4
Switch Phase	2	2	2	6	6	8	8	4	4
Minimum Initial (s)	15.0	15.0	15.0	5.0	5.0	6.4	6.4	6.0	6.0
Minimum Split (s)	22.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Total Split (%)	40.0	40.0	40.0	15.0	55.0	20.0	20.0	20.0	20.0
Total Split (%)	53.3%	53.3%	53.3%	20.0%	73.3%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	4.3	4.3	4.3	3.6	4.3	3.6	3.6	3.6	3.6
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.01	0.44	0.24	0.55	0.30	0.56	0.52	0.11	0.11
Control Delay	7.0	7.0	0.8	6.0	3.2	39.9	9.4	18.3	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	7.0	0.8	6.0	3.2	39.9	9.4	18.3	18.3
Queue Length 50th (ft)	0	46	0	17	26	50	2	6	6
Queue Length 95th (ft)	1	67	2	m22	m32	78	0	16	16
Internal Link Dist (ft)	686	110	90	555	531	187	144	323	323
Turn Bay Length (ft)	343	1777	903	510	2450	264	478	0	0
Base Capacity (vph)	0	0	0	0	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.44	0.24	0.54	0.30	0.44	0.46	0.09	0.09
Intersection Summary									
Cycle Length: 75									
Actuated Cycle Length: 75									
Offset: 68 (91%), Referenced to phase 2 EBT and 6 WBT, Start of Green									
Natural Cycle: 45									
Control Type: Actuated-Coordinated									
m Volume for 95th percentile queue is metered by upstream signal.									



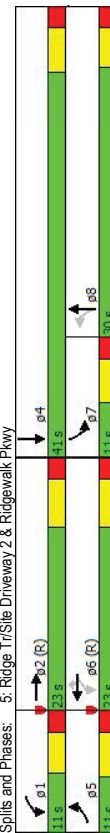
	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	1	731	204	250	675	86	2	2	6
Traffic Volume (vph)	1	731	204	250	675	86	2	2	6
Future Volume (vph)	1	731	204	250	675	86	2	2	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.99	0.99
Satd. Flow (prot)	1770	3539	1583	1770	3536	1770	1588	1725	1725
Flt Permitted	0.37	1.00	1.00	0.27	1.00	0.74	1.00	0.94	0.94
Satd. Flow (perm)	686	3539	1583	501	3536	1377	1588	1627	1627
Peak-hour factor, PHF	0.25	0.93	0.93	0.91	0.91	0.25	0.75	0.50	0.50
Adj. Flow (vph)	4	786	219	275	742	4	115	4	10
RTOR Reduction (vph)	0	0	109	0	0	0	183	0	12
Lane Group Flow (vph)	4	786	110	275	746	0	115	36	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	6	6	8	8	4	4
Permitted Phases	2	2	2	6	6	8	8	4	4
Actuated Green, G (s)	37.7	37.7	37.7	52.0	52.0	11.1	11.1	11.1	11.1
Effective Green, g (s)	37.7	37.7	37.7	52.0	52.0	11.1	11.1	11.1	11.1
Actuated g/C Ratio	0.50	0.50	0.50	0.69	0.69	0.15	0.15	0.15	0.15
Clearance Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Vehicle Extension (s)	5.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	344	1778	795	494	2451	203	235	240	240
v/s Ratio Prot	0.22	0.07	0.07	c0.06	0.21	c0.08	0.02	0.01	0.01
v/s Ratio Perm	0.01	0.44	0.14	0.56	0.30	0.57	0.15	0.07	0.07
Uniform Delay, d1	9.3	11.9	10.0	5.4	4.5	29.7	27.8	27.5	27.5
Progression Factor	0.61	0.49	0.13	0.62	0.61	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.7	0.3	1.0	0.2	3.6	0.3	0.1	0.1
Delay (s)	5.8	6.5	1.7	4.4	2.9	33.3	28.2	27.6	27.6
Level of Service	A	A	A	A	A	C	C	C	C
Approach Delay (s)	5.5	A	A	3.3	A	29.9	C	27.6	C
Approach LOS	A	A	A	A	A	C	C	C	C
Intersection Summary									
HCM 2000 Control Delay				8.2		HCM 2000 Level of Service	A		
HCM 2000 Volume to Capacity ratio				0.59					
Actuated Cycle Length (s)				75.0		Sum of lost time (s)	17.5		
Intersection Capacity Utilization				60.1%		ICU Level of Service	B		
Analysis Period (min)				15					
c Critical Lane Group									

Queues
5: Ridge Tr/Site Driveway 2 & Ridgewalk Pkwy

Build AM
1/20/2016

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	185	524	58	554	36	221	4	94
Traffic Volume (vph)	185	524	58	554	36	221	4	94
Future Volume (vph)	185	524	58	554	36	221	4	94
Ideal Flow (vphpl)	201	726	85	630	39	0	439	102
Lane Group Flow (vph)	Prot	NA	pm-pt	NA	Perm	NA	Prot	NA
Protected Phases	5	2	1	6	6	8	7	4
Permitted Phases	5	2	1	6	6	8	7	4
Detector Phase	5	2	1	6	6	8	7	4
Switch Phase	5	2	1	6	6	8	7	4
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	6.0	5.0	5.0
Minimum Split (s)	11.0	22.0	11.0	22.0	22.0	12.0	11.0	28.0
Total Split (%)	14.7%	30.7%	14.7%	30.7%	30.7%	40.0%	14.7%	54.7%
Yellow Time (s)	4.0	4.3	3.6	4.3	4.3	3.6	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.3	5.6	6.3	6.3	5.6	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	None	C-Max	None	C-Max	None	None	None	None
Recall Mode	0.78	0.73	0.36	0.73	0.07	1.01	0.45	0.13
v/c Ratio	63.1	22.2	18.0	31.8	0.2	74.2	40.3	3.6
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.1	22.2	18.0	31.8	0.2	74.2	40.3	3.6
Queue Length 50th (ft)	43	127	27	151	0	~200	24	1
Queue Length 95th (ft)	#101	#239	m54	#218	m0	#386	47	24
Internal Link Dist (ft)	483	884	884	282	282	215	215	215
Turn Bay Length (ft)	145	150	150	100	100	433	228	793
Base Capacity (vph)	257	991	238	862	549	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.73	0.36	0.73	0.07	1.01	0.45	0.12

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 27 (36%), Referenced to phase 2 EBT and 6 WBT. Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	



HCM Signalized Intersection Capacity Analysis
5: Ridge Tr/Site Driveway 2 & Ridgewalk Pkwy

Build AM
1/20/2016

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Movement	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	185	524	101	58	554	36	221	4
Traffic Volume (vph)	185	524	101	58	554	36	221	4
Future Volume (vph)	185	524	101	58	554	36	221	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.3	5.6	6.3	6.3	5.6	6.0	6.0
Lane Util. Factor	0.97	0.95	1.00	0.95	1.00	0.97	1.00	0.86
Flt	1.00	0.98	1.00	1.00	0.85	1.00	0.97	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.96	0.95	1.00
Satd. Flow (prot)	3433	3454	1770	3539	1583	1741	3433	1598
Flt Permitted	0.95	1.00	0.23	1.00	1.00	0.71	0.95	1.00
Satd. Flow (perm)	3433	3454	436	3539	1583	1289	3433	1598
Peak-hour factor, PHF	0.92	0.86	0.86	0.88	0.92	0.65	0.92	0.92
Adj. Flow (vph)	201	609	117	85	630	340	4	95
RTOR Reduction (vph)	0	20	0	0	30	0	13	0
Lane Group Flow (vph)	201	706	0	85	630	9	0	426
Turn Type	Prot	NA	pm-pt	NA	Perm	NA	Prot	NA
Protected Phases	5	2	1	6	6	8	7	4
Permitted Phases	5	2	1	6	6	8	7	4
Actuated Green, G (s)	5.6	18.8	21.4	17.1	17.1	24.4	4.0	34.0
Effective Green, g (s)	5.6	18.8	21.4	17.1	17.1	24.4	4.0	34.0
Actuated g/C Ratio	0.07	0.25	0.29	0.23	0.23	0.33	0.05	0.45
Clearance Time (s)	6.0	6.3	5.6	6.3	6.3	5.6	6.0	6.0
Vehicle Extension (s)	3.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0
Lane Grp Cap (vph)	256	865	200	806	360	419	183	724
v/s Ratio Prot	c0.06	c0.20	0.02	0.18	0.01	c0.33	c0.03	0.03
v/c Ratio	0.79	0.82	0.42	0.78	0.02	1.02	0.56	0.06
Uniform Delay, d1	34.1	26.5	20.5	27.2	22.5	25.3	34.6	11.5
Progression Factor	1.21	0.61	0.92	0.98	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.6	7.8	1.2	6.4	0.1	47.9	3.6	0.0
Delay (s)	54.9	23.8	20.0	33.1	22.6	73.2	38.3	11.6
Level of Service	D	C	C	C	C	E	D	B
Approach Delay (s)	30.6	31.1	31.1	73.2	25.5			
Approach LOS	C	C	C	E	C			

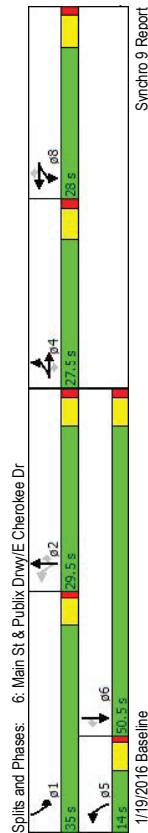
Intersection Summary	
HCM 2000 Control Delay	38.4
HCM 2000 Volume to Capacity ratio	0.91
Actuated Cycle Length (s)	75.0
Intersection Capacity Utilization	60.4%
Analysis Period (min)	15
c Critical Lane Group	

Queues
6: Main St & Publix Drwy/E Cherokee Dr

Build AM
1/20/2016

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4
Traffic Volume (vph)	116	19	553	22	303	18	134	345	512	580
Future Volume (vph)	116	19	553	22	303	18	134	345	512	580
Ideal Flow (vphpl)	171	36	322	325	356	36	203	411	632	744
Turn Type	NA	Perm	Split	NA	Perm	pm-pt	NA	Perm	Prot	NA
Protected Phases	4	4	8	8	8	5	2	2	1	6
Permitted Phases	4	4	8	8	8	5	2	2	1	6
Detector Phase	4	4	8	8	8	5	2	2	1	6
Switch Phase	4	4	8	8	8	5	2	2	1	6
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	15.0	15.0	8.0	15.0
Minimum Split (s)	27.5	27.5	27.5	27.5	27.5	14.0	26.0	26.0	14.0	32.0
Minimum Split (%)	27.5	27.5	28.0	28.0	28.0	14.0	29.5	29.5	35.0	50.5
Total Split (%)	22.9%	22.9%	23.3%	23.3%	23.3%	11.7%	24.6%	24.6%	29.2%	42.1%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.0	1.5	1.5	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.5	5.0	5.5
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
v/c Ratio	0.66	0.10	0.93	0.93	0.59	0.18	0.50	0.62	0.82	0.95
Control Delay	57.1	0.5	78.5	78.4	8.7	20.3	43.8	8.4	49.7	53.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.1	0.5	78.5	78.4	8.7	20.3	43.8	8.4	49.7	53.9
Queue Length 50th (ft)	120	0	248	250	0	12	126	0	226	540
Queue Length 95th (ft)	148	0	#477	218	62	17	154	58	262	#671
Internal Link Dist (ft)	33		935				546		494	
Turn Bay Length (ft)			650		300	100		255	330	120
Base Capacity (vph)	374	452	346	349	608	213	429	681	963	787
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.08	0.93	0.93	0.59	0.17	0.47	0.60	0.66	0.95

Intersection Summary										
Cycle Length: 120										
Actuated Cycle Length: 107.9										
Natural Cycle: 125										
Control Type: Actuated-Uncoordinated										
~ Volume exceeds capacity, queue is theoretically infinite.										
Queue shown is maximum after two cycles.										
# 95th percentile volume exceeds capacity, queue may be longer.										
Queue shown is maximum after two cycles.										



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HCM Signalized Intersection Capacity Analysis
6: Main St & Publix Drwy/E Cherokee Dr

Build AM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	3	116	19	553	22	303	18	134	345	512	580
Traffic Volume (vph)	3	116	19	553	22	303	18	134	345	512	580
Future Volume (vph)	3	116	19	553	22	303	18	134	345	512	580
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.0	5.5	5.5
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	0.85
Flt Protected	1.00	1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1858	1583	1681	1695	1583	1770	1863	1583	3433	1863	1583
Flt Permitted	1.00	1.00	1.00	0.95	0.96	1.00	0.15	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1858	1583	1681	1695	1583	288	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.38	0.71	0.53	0.91	0.86	0.85	0.50	0.66	0.84	0.81	0.78
Adj. Flow (vph)	8	163	36	608	39	356	36	203	411	632	744
RTOR Reduction (vph)	0	0	31	0	0	284	0	0	314	0	0
Lane Group Flow (vph)	0	171	5	322	325	72	36	203	97	632	744
Turn Type	Split	NA	Perm	Split	NA	Perm	pm-pt	NA	Perm	Prot	NA
Protected Phases	4	4	4	8	8	5	2	2	1	6	6
Permitted Phases	4	4	4	8	8	5	2	2	1	6	6
Actuated Green, G (s)	15.2	15.2	22.2	22.2	22.2	30.4	25.9	25.9	24.2	45.6	45.6
Effective Green, g (s)	15.2	15.2	22.2	22.2	22.2	30.4	25.9	25.9	24.2	45.6	45.6
Actuated g/C Ratio	0.14	0.14	0.20	0.20	0.20	0.28	0.24	0.24	0.22	0.41	0.41
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	256	218	339	342	319	140	438	372	755	772	656
v/s Ratio Prot	c0.09		0.00	0.19	c0.19	0.01	0.11		c0.18	c0.40	
v/s Ratio Perm		0.67	0.02	0.95	0.95	0.23	0.26	0.46	0.26	0.84	0.96
v/c Ratio		45.0	41.0	43.4	43.4	36.7	31.3	36.1	34.2	41.0	31.4
Uniform Delay, d1		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Progression Factor		6.5	0.0	35.4	35.7	0.4	1.0	1.6	0.8	8.0	24.0
Incremental Delay, d2		51.5	41.0	78.7	79.0	37.1	32.3	37.7	35.0	49.1	55.4
Delay (s)		D	D	E	E	D	C	D	D	D	E
Level of Service		49.6		64.0		35.7		D	D	D	52.2
Approach Delay (s)		D		E		D		D		D	D
Approach LOS		D		E		D		D		D	D

Intersection Summary										
HCM 2000 Control Delay	52.4									
HCM 2000 Volume to Capacity ratio	0.93									
Actuated Cycle Length (s)	110.0									
Intersection Capacity Utilization	73.5%									
Analysis Period (min)	15									
c Critical Lane Group										

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HCM Unsignalized Intersection Capacity Analysis 7: Main St & Rope Mill Rd/E Main St Build AM 1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	2	149	1	0	3	116	228	2	8	555	28
Future Volume (Veh/h)	13	2	149	1	0	3	116	228	2	8	555	28
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.38	0.25	0.69	0.25	0.92	0.92	0.42	0.90	0.50	0.33	0.88	0.57
Hourly flow rate (vph)	34	8	216	4	0	3	276	253	4	24	631	49
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None											
Median storage (veh)												
Upstream signal (ft)												
pX platoon unblocked												
VC, conflicting volume	1514	1512	656	1730	1535	255	680			257		
VC1, stage 1 conf vol												
VC2, stage 2 conf vol												
VCu, unblocked vol	1514	1512	656	1730	1535	255	680			257		
IC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
IC, 2 stage (s)												
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	54	90	54	85	100	100	70			98		
CM capacity (veh/h)	74	82	466	26	80	784	912			1308		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	258	7	533	704								
Volume Left	34	4	276	24								
Volume Right	216	3	4	49								
cSH	253	45	912	1308								
Volume to Capacity	102	0.16	0.30	0.02								
Queue Length 95th (ft)	254	13	32	1								
Control Delay (s)	105.0	100.4	7.3	0.5								
Lane LOS	F	F	A	A								
Approach Delay (s)	105.0	100.4	7.3	0.5								
Approach LOS	F	F										
Intersection Summary												
Average Delay	21.3			ICU Level of Service			C					
Intersection Capacity Utilization	70.7%											
Analysis Period (min)	15											

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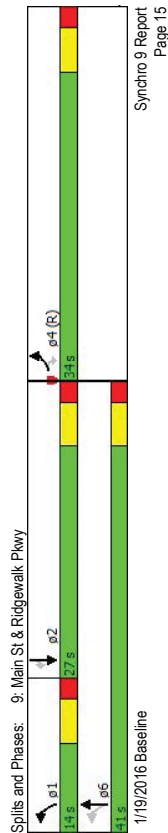
HCM Unsignalized Intersection Capacity Analysis 8: Woodstock Pkwy & Outlet Shopping Drwy/Rope Mill Rd Build AM 1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	26	40	43	70	40	71	66	135	50	73	244	30
Future Volume (veh/h)	26	40	43	70	40	71	66	135	50	73	244	30
Peak Hour Factor	0.67	0.75	0.81	0.66	0.60	0.75	0.62	0.82	0.75	0.79	0.73	0.75
Hourly flow rate (vph)	39	53	53	106	67	95	106	165	67	92	334	40
Approach Volume (veh/h)	145			268			338			466		
Crossing Volume (veh/h)	532			310			184			279		
High Capacity (veh/h)	910			1086			1199			1113		
High v/c (veh/h)	0.16			0.25			0.28			0.42		
Low Capacity (veh/h)	734			890			993			915		
Low v/c (veh/h)	0.20			0.30			0.34			0.51		
Intersection Summary												
Maximum v/c High	0.42											
Maximum v/c Low	0.51											
Intersection Capacity Utilization	46.9%			ICU Level of Service			A					

1/19/2016 Baseline

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	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	4	4	1	6	2	2
Traffic Volume (vph)	484	206	85	168	352	500
Future Volume (vph)	484	206	85	168	352	500
Lane Group Flow (vph)	569	240	92	213	374	588
Turn Type	Prot	Perm	pm-pt	NA	NA	Perm
Protected Phases	4	4	6	6	2	2
Permitted Phases	4	4	1	6	2	2
Detector Phase	4	4	1	6	2	2
Switch Phase	4	4	1	6	2	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	10.0	22.0	22.0	22.0
Minimum Split (%)	34.0	34.0	14.0	41.0	27.0	27.0
Total Split (%)	45.3%	45.3%	18.7%	54.7%	36.0%	36.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	None	None	None	None
v/c Ratio	0.72	0.28	0.32	0.29	0.82	0.72
Control Delay	13.1	0.6	15.1	15.1	42.2	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.1	0.6	15.1	15.1	42.2	8.5
Queue Length 50th (ft)	49	0	23	57	156	7
Queue Length 95th (ft)	m#350	m0	48	84	#289	63
Internal Link Dist (ft)	1155		596	714		
Turn Bay Length (ft)	177				110	
Base Capacity (vph)	794	843	299	869	521	850
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.28	0.31	0.25	0.72	0.69
Intersection Summary						
Cycle Length: 75						
Actuated Cycle Length: 75						
Offset: 68 (91%), Referenced to phase 4 EBL Start of Green						
Natural Cycle: 60						
Control Type: Actuated-Coordinated						
# 95th percentile volume exceeds capacity, queue may be longer.						
Queue shown is maximum after two cycles.						
m Volume for 95th percentile queue is metered by upstream signal.						



	EBL	EBR	NBL	NBT	SBT	SBR
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	4	4	1	6	2	2
Traffic Volume (vph)	484	206	85	168	352	500
Future Volume (vph)	484	206	85	168	352	500
Lane Group Flow (vph)	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	6.0	6.0	6.0	6.0	6.0	6.0
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	0.95	0.85	1.00	0.95	1.00	0.85
Flt Protected	1770	1583	1770	1583	1863	1583
Satd. Flow (prot)	0.95	1.00	0.21	1.00	1.00	1.00
Flt Permitted	1770	1583	390	1863	1863	1583
Satd. Flow (perm)	0.85	0.86	0.92	0.79	0.94	0.85
Peak-hour factor, PHF	569	240	92	213	374	588
Adj. Flow (vph)	0	136	0	0	0	428
RTOR Reduction (vph)	569	104	92	213	374	160
Lane Group Flow (vph)	Prot	Perm	pm-pt	NA	NA	Perm
Turn Type	4	1	6	2		
Protected Phases						
Permitted Phases	4	6				2
Actuated Green, G (s)	32.5	32.5	30.5	30.5	18.3	18.3
Effective Green, g (s)	32.5	32.5	30.5	30.5	18.3	18.3
Actuated g/C Ratio	0.43	0.43	0.41	0.41	0.24	0.24
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	5.0	5.0	5.0
Lane Grp Cap (vph)	767	685	272	757	454	386
v/s Ratio Prot	c0.32	c0.07	c0.11	c0.20		
v/c Ratio Perm	0.74	0.15	0.34	0.28	0.82	0.41
Uniform Delay, d1	17.7	12.9	15.5	14.9	26.8	23.8
Progression Factor	0.35	0.01	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.7	0.3	0.7	0.4	12.8	1.5
Delay (s)	11.0	0.4	16.3	15.3	39.7	25.4
Level of Service	B	A	B	B	D	C
Approach Delay (s)	7.8		15.6	30.9		
Approach LOS	A		B	C		
Intersection Summary						
HCM 2000 Control Delay			19.7			B
HCM 2000 Volume to Capacity ratio			0.73			
Actuated Cycle Length (s)			75.0			18.0
Intersection Capacity Utilization			65.0%			C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis 10: Site Driveway 5/Site Driveway 1 & Ridgewalk Pkwy

Build AM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔	↔	↔	↔↔	↔				↔	↔	↔
Traffic Volume (veh/h)	0	798	80	0	835	22	0	0	12	0	0	64
Future Volume (Veh/h)	0	798	80	0	835	22	0	0	12	0	0	64
Sign Control		Free		Free			Yield				Yield	
Grade		0%		0%			0%				0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	867	87	0	908	24	0	0	13	0	0	70
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None										
Median storage (veh)		635				563						
Upstream signal (ft)		0.86		0.89			0.92	0.92	0.89	0.92	0.92	0.86
pX platoon unblocked		908		867			1321	1775	434	1342	1775	454
VC conflicting volume												
VC1 stage 1 conf vol												
VC2 stage 2 conf vol												
VCu unblocked vol	562			590			602	1098	101	624	1098	33
IC single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
IC 2 stage (s)												
IF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	98	100	100	92
p0 capacity (veh/h)	863			869			323	194	828	333	194	887
Direction Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 1	SB 1			
Volume Total	434	434	87	454	454	24	13	70				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	0	0	87	0	0	24	13	70				
cSH	1700	1700	1700	1700	1700	1700	828	887				
Volume to Capacity	0.26	0.26	0.05	0.27	0.27	0.01	0.02	0.08				
Queue Length 95th (ft)	0	0	0	0	0	0	1	6				
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.4	9.4				
Lane LOS				A	A	A	A	A				
Approach Delay (s)	0.0			0.0			9.4	9.4				
Approach LOS				A			A	A				
Intersection Summary												
Average Delay						0.4						
Intersection Capacity Utilization						33.7%						A
Analysis Period (min)						15						

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HCM Unsignalized Intersection Capacity Analysis 11: Ridgewalk Pkwy & Site Driveway 3

Build AM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR
Lane Configurations		↔↔	↔	↔	↔↔	↔	↔	↔
Traffic Volume (veh/h)	0	698	583	33	0	64	0	64
Future Volume (Veh/h)	0	698	583	33	0	64	0	64
Sign Control		Free		Free		Yield		
Grade		0%		0%		0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	759	634	36	0	70	0	70
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type		None						
Median storage (veh)								
Upstream signal (ft)		964		1235			0.87	
pX platoon unblocked							1014	317
VC conflicting volume	634							
VC1 stage 1 conf vol								
VC2 stage 2 conf vol								
VCu unblocked vol	634						720	317
IC single (s)	4.1						6.8	6.9
IC 2 stage (s)								
IF (s)	2.2						3.5	3.3
p0 queue free %	100						100	90
p0 capacity (veh/h)	945						316	679
Direction Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1	SB 1
Volume Total	380	380	317	317	36	70		
Volume Left	0	0	0	0	0	0		
Volume Right	0	0	0	0	36	70		
cSH	1700	1700	1700	1700	1700	679		
Volume to Capacity	0.22	0.22	0.19	0.19	0.02	0.10		
Queue Length 95th (ft)	0	0	0	0	0	9		
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	10.9		
Lane LOS						B		
Approach Delay (s)	0.0			0.0		10.9		
Approach LOS				B				
Intersection Summary								
Average Delay				0.5				
Intersection Capacity Utilization				26.7%				A
Analysis Period (min)				15				

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HCM Unsignalized Intersection Capacity Analysis 12: Ridge Tr & Site Driveway 4

Build AM
1/20/2016

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W					
Traffic Volume (veh/h)	39	1	3	266	110	54
Future Volume (veh/h)	39	1	3	266	110	54
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	42	1	3	289	120	59
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					362	
pX platoon unblocked						
VC conflicting volume	444	150	179			
VC1, stage 1 conf vol						
VC2, stage 2 conf vol						
VCu, unblocked vol	444	150	179			
IC, single (s)	6.4	6.2	4.1			
IC, 2 stage (s)						
p0 queue free %	3.5	3.3	2.2			
ICF (s)	93	100	100			
CM capacity (veh/h)	570	887	1387			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	43	292	179			
Volume Left	42	3	0			
Volume Right	1	0	59			
cSH	575	1397	1700			
Volume to Capacity	0.07	0.00	0.11			
Queue Length 95th (ft)	6	0	0			
Control Delay (s)	11.8	0.1	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.8	0.1	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			26.4%			A
Analysis Period (min)			15			

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Queues 1: I-575 SB Ramps & Ridgewalk Pkwy

Build PM
1/20/2016

	EBT	WBL	WBT	SBT	SBR
Lane Group	EBT	WBL	WBT	SBT	SBR
Lane Configurations	EBT	WBL	WBT	SBT	SBR
Traffic Volume (vph)	134	919	276	2	41
Future Volume (vph)	134	919	276	2	41
Lane Group Flow (vph)	271	999	314	478	53
Turn Type	NA	Perm	NA	NA	Perm
Protected Phases	2	6	6	4	4
Permitted Phases	2	6	6	4	4
Detector Phase	2	6	6	4	4
Switch Phase					
Minimum Initial (s)	15.0	15.0	15.0	6.0	6.0
Minimum Split (s)	21.3	22.0	22.0	13.0	13.0
Total Split (s)	81.0	81.0	81.0	29.0	29.0
Total Split (%)	73.6%	73.6%	73.6%	26.4%	26.4%
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	C-Max	C-Max	C-Max	None	None
v/c Ratio	0.22	1.33	0.25	1.31	0.14
Control Delay	5.6	176.8	6.1	192.6	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	5.6	176.8	6.1	192.6	12.1
Queue Length 50th (ft)	50	~916	63	~434	2
Queue Length 95th (ft)	65	#1181	102	239	26
Internal Link Dist (ft)	563		559	412	
Turn Bay Length (ft)					
Base Capacity (vph)	1222	750	1265	366	366
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.22	1.33	0.25	1.31	0.14
Intersection Summary					
Cycle Length: 110					
Actuated Cycle Length: 110					
Offset: 19 (17%), Referenced to phase 2EBT and 6WBTL Start of Green					
Natural Cycle: 150					
Control Type: Actuated-Coordinated					
Volume exceeds capacity, queue is theoretically infinite.					
Queue shown is maximum after two cycles.					
# 95th percentile volume exceeds capacity, queue may be longer.					
Queue shown is maximum after two cycles.					

Splits and Phases: 1: I-575 SB Ramps & Ridgewalk Pkwy



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HCM Signalized Intersection Capacity Analysis 1: I-575 SB Ramps & Ridgewalk Pkwy

Build PM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	134	70	919	276	0	0	0	0	403	2	41
Future Volume (vph)	0	134	70	919	276	0	0	0	0	403	2	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	1.00	0.95	1.00	0.95	1.00	1.00	0.85	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1773	1770	1863	1770	1863	1770	1583	1770	1863	1770	1583	1770
Flt Permitted	1.00	0.59	1.00	0.59	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1773	1104	1863	1773	1863	1773	1583	1773	1863	1773	1583	1773
Peak-hour factor, PHF	0.92	0.77	0.72	0.92	0.88	0.92	0.92	0.92	0.92	0.85	0.50	0.77
Adj. Flow (vph)	0	174	97	999	314	0	0	0	0	474	4	53
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	0	40
Lane Group Flow (vph)	0	253	0	999	314	0	0	0	0	0	478	13
Turn Type	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Protected Phases	2	6	6	6	6	6	6	6	6	6	6	6
Permitted Phases	6	6	6	6	6	6	6	6	6	6	6	6
Actuated Green, G (s)	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7
Effective Green, g (s)	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	1204	749	1265	749	1265	749	1265	749	1265	749	1265	749
v/s Ratio Prot	0.14	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
v/s Ratio Perm	0.21	1.33	0.25	1.33	0.25	1.33	0.25	1.33	0.25	1.33	0.25	1.33
c Ratio	0.21	1.33	0.25	1.33	0.25	1.33	0.25	1.33	0.25	1.33	0.25	1.33
Uniform Delay, d1	6.6	17.6	6.8	17.6	6.8	17.6	6.8	17.6	6.8	17.6	6.8	17.6
Progression Factor	1.00	0.76	0.81	0.76	0.81	0.76	0.81	0.76	0.81	0.76	0.81	0.76
Incremental Delay, d2	0.4	158.7	0.4	158.7	0.4	158.7	0.4	158.7	0.4	158.7	0.4	158.7
Delay (s)	7.0	172.2	6.0	172.2	6.0	172.2	6.0	172.2	6.0	172.2	6.0	172.2
Level of Service	A	F	A	F	A	F	A	F	A	F	A	F
Approach Delay (s)	7.0	132.4	6.0	132.4	6.0	132.4	6.0	132.4	6.0	132.4	6.0	132.4
Approach LOS	A	F	A	F	A	F	A	F	A	F	A	F
Intersection Summary												
HCM 2000 Control Delay	129.2	HCM 2000 Level of Service										
HCM 2000 Volume to Capacity ratio	1.33	F										
Actuated Cycle Length (s)	110.0	Sum of lost time (s)										
Intersection Capacity Utilization	88.6%	ICU Level of Service										
Analysis Period (min)	15	E										
Critical Lane Group												

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Queues 2: I-575 NB Ramps & Ridgewalk Pkwy

Build PM
1/20/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Lane Configurations									
Traffic Volume (vph)	36	494	1057	612	0	755	0	755	0
Future Volume (vph)	36	494	1057	612	0	755	0	755	0
Lane Group Flow (vph)	56	549	1101	658	158	788	0	788	0
Turn Type	Perm	NA	NA	Perm	NA	Free	0	0	0
Protected Phases	2	2	6	6	6	8	0	0	0
Permitted Phases	2	2	6	6	6	8	0	0	0
Detector Phase	2	2	6	6	6	8	0	0	0
Switch Phase	2	2	6	6	6	8	0	0	0
Minimum Initial (s)	15.0	15.0	6.0	6.0	6.0	5.7	0	0	0
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0	12.0	0	0	0
Total Split (s)	78.0	78.0	78.0	78.0	78.0	32.0	0	0	0
Total Split (%)	70.9%	70.9%	70.9%	70.9%	70.9%	29.1%	0	0	0
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	4.3	0	0	0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0	0	0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	0	0	0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode									
C-Max	0.17	0.39	0.42	0.49	0.65	0.50	0	0	0
v/c Ratio	1.3	2.6	3.6	0.8	57.1	1.1	0	0	0
Control Delay	0.0	0.8	0.1	0.2	0.3	0.0	0	0	0
Queue Delay	1.3	3.3	3.7	1.0	57.4	1.1	0	0	0
Total Delay	2	24	80	5	107	0	0	0	0
Queue Length 50th (ft)	m3	m27	m108	m2	167	0	0	0	0
Queue Length 95th (ft)	559	534	534	615	615	0	0	0	0
Internal Link Dist (ft)	420	225	225	413	413	1583	0	0	0
Turn Bay Length (ft)	331	1393	2647	1350	413	1583	0	0	0
Base Capacity (vph)	0	513	567	164	0	0	0	0	0
Starvation Cap Reductn	0	0	261	0	50	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.62	0.53	0.55	0.44	0.50	0	0	0
Intersection Summary									
Cycle Length: 110									
Actuated Cycle Length: 110									
Offset: 104 (95%), Referenced to phase 2:EBTL and 6:WBT, Start of Green									
Natural Cycle: 40									
Control Type: Actuated-Coordinated									
m Volume for 95th percentile queue is metered by upstream signal.									
Splits and Phases: 2: I-575 NB Ramps & Ridgewalk Pkwy									

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HCM Signalized Intersection Capacity Analysis 2: I-575 NB Ramps & Ridgeway Pkwy

Build PM
 1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	→	↖	↗	↗	↖	↗	↖	↖	↗	↖
Traffic Volume (vph)	36	494	0	0	1057	612	131	0	755	0	0	0
Future Volume (vph)	36	494	0	0	1057	612	131	0	755	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3			6.3	6.3		6.3	4.0			
Lane Util. Factor	1.00	1.00			0.95	1.00		1.00	1.00			
Flt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	1863			3539	1583		1770	1583			
Flt Permitted	0.24	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	443	1863			3539	1583		1770	1583			
Peak-hour factor, PHF	0.64	0.90	0.92	0.92	0.96	0.93	0.83	0.92	0.96	0.92	0.92	0.92
Adj. Flow (vph)	56	549	0	0	1101	658	158	0	786	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	166	0	0	0	0	0	0
Lane Group Flow (vph)	56	549	0	0	1101	492	0	158	786	0	0	0
Turn Type	Perm	NA	NA	NA	Perm	Perm	Perm	NA	Free	Free	Free	Free
Protected Phases	2				6		8					
Permitted Phases	2				6		8					
Actuated Green, G (s)	82.3	82.3			82.3	82.3	15.1	110.0				
Effective Green, g (s)	82.3	82.3			82.3	82.3	15.1	110.0				
Actuated g/C Ratio	0.75	0.75			0.75	0.75	0.14	1.00				
Clearance Time (s)	6.3	6.3			6.3	6.3	6.3					
Vehicle Extension (s)	5.0	5.0			5.0	5.0	3.0					
Lane Grp Cap (vph)	331	1393			2647	1184	242	1583				
v/s Ratio Prot	0.29				0.31							
v/s Ratio Perm	0.13				0.42	0.42	0.65	0.50				
v/c Ratio	0.17	0.39			0.42	0.42	0.65	0.50				
Uniform Delay, d1	4.0	4.9			5.1	5.1	46.0	0.0				
Progression Factor	0.23	0.44			0.60	0.59	1.00	1.00				
Incremental Delay, d2	0.1	0.1			0.2	0.5	6.2	1.1				
Delay (s)	1.0	2.3			3.3	3.4	51.2	1.1				
Level of Service	A	A			A	A	D	A				
Approach Delay (s)	2.1				3.3		9.5					
Approach LOS	A				A		A					
Intersection Summary												
HCM 2000 Control Delay	4.9				HCM 2000 Level of Service				A			
HCM 2000 Volume to Capacity ratio	0.56											
Actuated Cycle Length (s)	110.0				Sum of lost time (s)				12.6			
Intersection Capacity Utilization	88.6%				ICU Level of Service				E			
Analysis Period (min)	15											
Critical Lane Group												

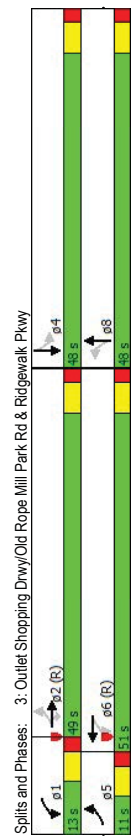
1/19/2016 Baseline

Synchro 9 Report
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Queues 3: Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgeway Pkwy

Build PM
 1/20/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	71	965	256	91	1221	283	21	57	15
Future Volume (vph)	71	965	256	91	1221	283	21	57	15
Lane Group Flow (vph)	76	1045	262	121	1453	311	176	66	333
Turn Type	pm-pt	NA	Perm	pm-pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	2	6	1	6	8	4	4
Permitted Phases	2			2	6			4	
Detector Phase	5	2	2	1	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Total Split (s)	11.0	49.0	49.0	13.0	51.0	48.0	48.0	48.0	48.0
Total Split (%)	10.0%	44.5%	44.5%	11.8%	46.4%	43.6%	43.6%	43.6%	43.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None
v/c Ratio	0.51	0.79	0.36	0.64	0.96	1.01	0.25	0.15	0.48
Control Delay	26.2	25.1	1.5	37.3	32.9	89.3	6.9	23.5	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.2	25.1	1.5	37.3	32.9	89.3	6.9	23.5	18.4
Queue Length 50th (ft)	17	310	0	34	~340	~221	14	30	107
Queue Length 95th (ft)	51	380	0	78	#688	#405	28	60	121
Internal Link Dist (ft)		534		686		232		281	
Turn Bay Length (ft)	275		410	268			201		
Base Capacity (vph)	148	1321	722	189	1507	308	711	444	687
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.79	0.36	0.64	0.96	1.01	0.25	0.15	0.48
Intersection Summary									
Cycle Length: 110									
Actuated Cycle Length: 110									
Offset: 11 (10%), Referenced to phase 2:EBTL and 6:WBT, Start of Green									
Natural Cycle: 100									
Control Type: Actuated-Coordinated									
Volume exceeds capacity, queue is theoretically infinite.									
# Queue shown is maximum after two cycles.									
# 95th percentile volume exceeds capacity, queue may be longer.									
Queue shown is maximum after two cycles.									



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HCM Signalized Intersection Capacity Analysis

Build PM
1/20/2016

3: Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1	1
Traffic Volume (vph)	71	965	256	91	1221	70	283	21	109	57	15	187
Future Volume (vph)	71	965	256	91	1221	70	283	21	109	57	15	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	1.00	1.00	0.85	1.00	0.99	1.00	0.88	1.00	0.88	1.00	0.86	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3376	1441	1770	3499	1770	1633	1770	1633	1770	1601	1770
Flt Permitted	0.09	1.00	1.00	0.10	1.00	0.43	1.00	0.43	1.00	0.63	1.00	1.00
Satd. Flow (perm)	173	3376	1441	187	3499	809	1633	809	1633	1164	1601	1601
Peak-hour factor, PHF	0.94	0.95	0.88	0.75	0.91	0.63	0.91	0.68	0.75	0.87	0.70	0.80
Adj. Flow (vph)	76	1016	291	121	1342	111	311	31	145	66	21	312
RTOR Reduction (vph)	0	2	160	0	5	0	0	88	0	0	77	0
Lane Group Flow (vph)	76	1043	102	121	1448	0	311	88	0	66	256	0
Turn Type	pm-pt	NA	Perm	NA	pm-pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	5	2	2	6	1	6	8	8	8	4	4	4
Permitted Phases	2	2	2	6	1	6	8	8	8	4	4	4
Actuated Green, G (s)	47.0	43.0	43.0	53.0	46.0	46.0	42.0	42.0	42.0	42.0	42.0	42.0
Effective Green, g (s)	47.0	43.0	43.0	53.0	46.0	46.0	42.0	42.0	42.0	42.0	42.0	42.0
Actuated g/C Ratio	0.43	0.39	0.39	0.48	0.42	0.42	0.38	0.38	0.38	0.38	0.38	0.38
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	131	1319	563	190	1463	308	623	308	623	444	611	611
v/s Ratio Prot	0.22	0.31	0.07	0.27	0.41	0.41	0.05	0.05	0.05	0.06	0.16	0.16
v/s Ratio Perm	0.58	0.79	0.18	0.64	0.99	1.01	0.14	0.14	0.15	0.15	0.42	0.42
Uniform Delay, d1	25.8	29.5	22.0	20.7	31.8	34.0	22.2	22.2	22.3	25.0	25.0	25.0
Progression Factor	1.00	0.69	0.07	1.46	0.53	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.9	4.5	0.6	5.8	19.3	53.8	0.1	0.1	0.2	0.5	0.5	0.5
Delay (s)	31.7	24.9	21	36.0	36.1	87.8	22.3	22.3	22.4	25.5	25.5	25.5
Level of Service	C	C	A	D	D	F	C	C	C	C	C	C
Approach Delay (s)	20.9			36.1			64.1			25.0		
Approach LOS	C			D			E			C		
Intersection Summary												
HCM 2000 Control Delay												C
HCM 2000 Volume to Capacity ratio												C
Actuated Cycle Length (s)												18.0
Intersection Capacity Utilization												E
Analysis Period (min)												15
c Critical Lane Group												

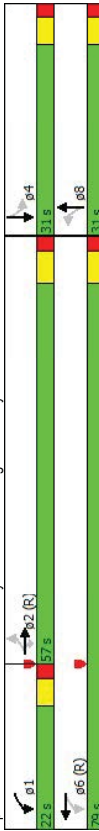
1/19/2016 Baseline

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4: Woodstock Pkwy/Meridian Dr & Ridgewalk Pkwy

Build PM
1/20/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	11	1083	63	172	1255	118	8	1	2
Future Volume (vph)	11	1083	63	172	1255	118	8	1	2
Ideal Flow (vphpl)	22	1128	84	212	1473	137	344	0	22
Lane Group Flow (vph)	Perm	NA	Perm	pm-pt	NA	Perm	NA	Perm	NA
Turn Type	Perm	NA	Perm	pm-pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	1	6	8	8	4	4
Permitted Phases	2	2	2	2	6	8	8	4	4
Detector Phase	2	2	2	2	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	6.4	6.4	6.0	6.0
Minimum Split (s)	22.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Total Split (s)	57.0	57.0	57.0	22.0	79.0	31.0	31.0	31.0	31.0
Total Spill (%)	51.8%	51.8%	51.8%	20.0%	71.8%	28.2%	28.2%	28.2%	28.2%
Yellow Time (s)	4.3	4.3	4.3	3.6	4.3	3.6	3.6	3.6	3.6
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Lead/Lag	Lag	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.11	0.53	0.09	0.55	0.56	0.67	0.70	0.17	0.17
Control Delay	3.6	3.4	0.1	10.0	4.7	58.8	15.9	24.9	24.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.6	3.4	0.1	10.0	4.7	58.8	15.9	24.9	24.9
Queue Length 50th (ft)	1	28	0	25	87	93	30	5	5
Queue Length 95th (ft)	m2	49	m1	m24	m91	140	0	11	11
Internal Link Dist (ft)		686				555	531	144	
Turn Bay Length (ft)	110	110	90	187					
Base Capacity (vph)	197	2111	977	461	2626	319	597	189	189
Starvation Cap Reduct	0	0	0	0	0	0	0	0	0
Spillover Cap Reduct	0	0	0	0	0	0	0	0	0
Storage Cap Reduct	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.53	0.09	0.46	0.56	0.43	0.58	0.12	0.12
Intersection Summary									
Cycle Length: 110									
Actuated Cycle Length: 110									
Offset: 29 (26%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green									
Natural Cycle: 60									
Control Type: Actuated-Coordinated									
m Volume for 95th percentile queue is metered by upstream signal.									
Spills and Phases: 4: Woodstock Pkwy/Meridian Dr. & Ridgewalk Pkwy									



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HCM Signalized Intersection Capacity Analysis 4: Woodstock Pkwy/Median Dr & Ridgewalk Pkwy

Build PM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1	1
Traffic Volume (vph)	11	1083	63	172	1255	6	118	8	264	1	2	6
Future Volume (vph)	11	1083	63	172	1255	6	118	8	264	1	2	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	1.00	1.00	0.85	1.00	1.00	1.00	1.00	0.86	1.00	0.91	0.99	0.99
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.99
Satd. Flow (prot)	1770	3539	1583	1770	3534	1770	1598	1770	1598	1687	1687	1687
Flt Permitted	0.18	1.00	1.00	0.18	1.00	0.18	0.74	1.00	0.74	1.00	0.45	0.45
Satd. Flow (perm)	332	3539	1583	330	3534	330	1384	1598	1384	1598	772	772
Peak-hour factor, PHF	0.50	0.96	0.75	0.81	0.86	0.42	0.86	0.44	0.81	0.25	0.50	0.42
Adj. Flow (vph)	22	1128	84	212	1459	14	137	18	326	4	4	14
RTOR Reduction (vph)	0	0	33	0	1	0	0	253	0	0	12	0
Lane Group Flow (vph)	22	1128	51	212	1472	0	137	91	0	0	10	0
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	6	6	1	6	8	8	4	4	4
Permitted Phases	2	2	2	6	6	1	6	8	8	4	4	4
Actuated Green, G (s)	65.6	65.6	65.6	81.7	81.7	16.4	16.4	16.4	16.4	16.4	16.4	16.4
Effective Green, g (s)	65.6	65.6	65.6	81.7	81.7	16.4	16.4	16.4	16.4	16.4	16.4	16.4
Actuated g/C Ratio	0.60	0.60	0.60	0.74	0.74	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Clearance Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Vehicle Extension (s)	5.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	197	2110	944	382	2624	206	238	238	238	115	115	115
v/s Ratio Prot	0.32	0.05	0.05	0.42	0.42	0.06	0.06	0.06	0.06	0.01	0.01	0.01
v/s Ratio Perm	0.07	0.03	0.03	0.36	0.36	0.07	0.07	0.07	0.07	0.09	0.09	0.09
v/c Ratio	0.11	0.53	0.05	0.55	0.56	0.67	0.38	0.38	0.38	0.42	0.42	0.42
Uniform Delay, d1	9.6	13.2	9.3	7.8	6.2	44.2	44.2	44.2	44.2	40.4	40.4	40.4
Progression Factor	0.20	0.18	0.01	1.50	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.7	0.1	0.9	0.5	7.8	7.8	7.8	7.8	1.0	1.0	1.0
Delay (s)	2.8	3.1	0.1	12.7	4.2	52.1	52.1	52.1	52.1	43.3	43.3	43.3
Level of Service	A	A	A	B	A	D	D	D	D	D	D	D
Approach Delay (s)	2.9	3.1	0.1	12.7	4.2	52.1	52.1	52.1	52.1	43.3	43.3	43.3
Approach LOS	A	A	A	B	A	D	D	D	D	D	D	D
Intersection Summary												
HCM 2000 Control Delay	10.3											
HCM 2000 Volume to Capacity ratio	0.61											
Actuated Cycle Length (s)	110.0											
Intersection Capacity Utilization	79.3%											
Analysis Period (min)	15											
c Critical Lane Group												

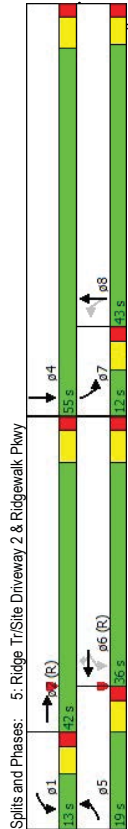
1/19/2016 Baseline

Synchro 9 Report
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Queues 5: Ridge Tr/Site Driveway 2 & Ridgewalk Pkwy

Build PM
1/20/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1	1
Traffic Volume (vph)	454	662	155	812	96	336	10	248	10	248	10	248
Future Volume (vph)	454	662	155	812	96	336	10	248	10	248	10	248
Lane Group Flow (vph)	483	937	176	944	104	0	488	270	216	0	0	0
Turn Type	Prot	NA	pm+pt	NA	Perm	Perm	Perm	NA	Prot	NA	NA	NA
Protected Phases	5	2	1	6	6	6	8	8	7	4	4	4
Permitted Phases	5	2	1	6	6	6	8	8	7	4	4	4
Detector Phase	5	2	1	6	6	6	8	8	7	4	4	4
Switch Phase	5	2	1	6	6	6	8	8	7	4	4	4
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	15.0	6.0	6.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	22.0	11.0	22.0	22.0	22.0	12.0	12.0	11.0	24.0	24.0	24.0
Total Split (s)	19.0	42.0	13.0	36.0	36.0	36.0	43.0	43.0	12.0	55.0	55.0	55.0
Total Split (%)	17.3%	38.2%	11.8%	32.7%	32.7%	32.7%	39.1%	39.1%	10.9%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.3	3.6	4.3	4.3	4.3	3.6	3.6	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.3	5.6	6.3	6.3	6.3	5.6	5.6	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?												
Recall Mode	None	C-Max	None	C-Max	C-Max	C-Max	None	None	None	None	None	None
v/c Ratio	1.22	0.83	0.92	0.99	0.20	0.20	1.24	1.44	0.26	0.26	0.26	0.26
Control Delay	147.2	39.4	56.8	57.4	4.0	4.0	161.3	265.1	3.9	3.9	3.9	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	147.2	39.4	56.8	57.4	4.0	4.0	161.3	265.1	3.9	3.9	3.9	3.9
Queue Length 50th (ft)	-222	348	73	320	2	2	-427	-134	4	4	4	4
Queue Length 95th (ft)	#319	407	m#88	m#385	m5	m5	#634	#219	47	47	47	47
Internal Link Dist (ft)	483	483	884	884	884	884	282	282	215	215	215	215
Turn Bay Length (ft)	145	150	150	150	150	150	100	100	100	100	100	100
Base Capacity (vph)	405	1133	192	955	533	533	393	187	825	825	825	825
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.22	0.83	0.92	0.99	0.20	0.20	1.24	1.44	0.26	0.26	0.26	0.26
Intersection Summary												
Cycle Length: 110												
Actuated Cycle Length: 110												
Offset: 95 (86%), Referenced to phase 2 EBT and 6 WBT. Start of Green												
Natural Cycle: 140												
Control Type: Actuated-Coordinated												
- Volume exceeds capacity, queue is theoretically infinite.												
# Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												
m Volume for 95th percentile queue is metered by upstream signal.												



HCM Signalized Intersection Capacity Analysis 5: Ridge Tr/Site Driveway 2 & Ridgeway Pkwy

Build PM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	HT	HT	HT	HT	HT	HT	HT	HT	HT	HT	HT	HT
Traffic Volume (vph)	454	662	176	155	812	96	336	10	63	248	10	189
Future Volume (vph)	454	662	176	155	812	96	336	10	63	248	10	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.3	5.6	6.3	6.3	6.3	5.6	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	1.00	0.95	1.00	1.00	1.00	0.97	1.00	0.97	1.00	1.00
Flt	1.00	0.97	1.00	1.00	1.00	1.00	0.98	1.00	0.98	1.00	0.86	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00	0.96	0.95	1.00	0.95	1.00	0.95
Satd. Flow (prot)	3433	3420	1770	3539	1583	1753	3433	3433	1598	3433	1598	3433
Flt Permitted	0.95	1.00	0.14	1.00	1.00	0.62	0.62	0.95	1.00	0.95	1.00	0.95
Satd. Flow (perm)	3433	3420	267	3539	1583	1139	3433	1598	3433	1598	3433	1598
Peak-hour factor, PHF	0.92	0.91	0.84	0.88	0.86	0.92	0.83	0.92	0.88	0.92	0.92	0.92
Adj. Flow (vph)	493	727	210	176	944	104	405	11	72	270	11	205
RTOR Reduction (vph)	0	24	0	0	0	76	0	6	0	0	114	0
Lane Group Flow (vph)	493	913	0	176	944	28	0	482	0	270	102	0
Turn Type	Prot	NA	NA	pm+pt	NA	Perm	Perm	NA	Prot	NA	Prot	NA
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases				6		6	8					
Actuated Green, G (s)	13.0	35.7	37.1	29.7	29.7	29.7	37.4	6.0	49.0	6.0	49.0	
Effective Green, g (s)	13.0	35.7	37.1	29.7	29.7	29.7	37.4	6.0	49.0	6.0	49.0	
Actuated g/c Ratio	0.12	0.32	0.34	0.27	0.27	0.27	0.34	0.05	0.45	0.05	0.45	
Clearance Time (s)	6.0	6.3	5.6	6.3	6.3	6.3	5.6	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	5.0	3.0	5.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	405	1109	191	955	427	387	187	711				
v/s Ratio Prot	0.14	0.27	0.06	0.27		0.02	0.02	0.08	0.06			
v/s Ratio Perm			0.25	0.92	0.99	0.07	1.25	1.44	0.14			
v/c Ratio	1.22	0.82	0.92	0.99	0.97	0.07	1.25	1.44	0.14			
Uniform Delay, d1	48.5	34.2	29.7	40.0	29.8	36.3	52.0	18.1				
Progression Factor	0.66	1.00	1.12	0.96	1.84	1.00	1.00	1.00				
Incremental Delay, d2	116.2	6.1	27.9	18.4	0.2	130.5	227.3	0.1				
Delay (s)	148.3	40.3	61.1	56.7	55.0	166.8	279.3	18.2				
Level of Service	F	D	E	E	E	E	F	F	B			
Approach Delay (s)	77.5		57.2		166.8			163.2				
Approach LOS	E		E		F			F				
Intersection Summary												
HCM 2000 Control Delay	94.1							F				
HCM 2000 Volume to Capacity ratio	1.16											
Actuated Cycle Length (s)	110.0							23.9				
Intersection Capacity Utilization	90.5%							E				
Analysis Period (min)	15											
c Critical Lane Group												

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Queues 6: Main St & Publix Drwy/E Cherokee Dr

Build PM
1/20/2016

Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	HT	HT	HT	HT	HT	HT	HT	HT	HT	HT	HT
Traffic Volume (vph)	81	75	455	78	423	108	481	675	327	288	18
Future Volume (vph)	81	75	455	78	423	108	481	675	327	288	18
Lane Group Flow (vph)	174	101	333	340	516	119	534	785	367	313	27
Turn Type	NA	Perm	Split	NA	Perm	pm+pt	NA	pt+ov	Prot	NA	Perm
Protected Phases	4		8	8	8	5	2	2	8	1	6
Permitted Phases											
Detector Phase	4	4	8	8	8	5	2	2	8	1	6
Switch Phase											
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	15.0	8.0	15.0	15.0	15.0
Minimum Split (s)	27.5	27.5	27.5	27.5	27.5	14.0	26.0	14.0	32.0	32.0	32.0
Total Split (s)	27.5	27.5	32.0	32.0	32.0	14.0	42.5	18.0	46.5	46.5	46.5
Total Split (%)	22.9%	22.9%	26.7%	26.7%	26.7%	11.7%	35.4%	15.0%	38.8%	38.8%	38.8%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.0	1.5	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.5	5.5	5.5	5.5
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	None	None	None	None	None
v/c Ratio	0.68	0.31	0.87	0.88	0.76	0.28	0.91	0.76	0.92	0.48	0.04
Control Delay	60.0	7.1	67.0	66.9	17.3	19.5	59.0	11.1	79.6	31.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.0	7.1	67.0	66.9	17.3	19.5	59.0	11.1	79.6	31.9	0.1
Queue Length 50th (ft)	124	0	251	256	62	47	373	94	140	177	0
Queue Length 95th (ft)	170	12	#383	267	144	89	#614	190	#245	279	0
Internal Link Dist (ft)	33		935		300	100	255	330	494		
Turn Bay Length (ft)	350	403	390	398	696	430	616	1058	398	684	662
Base Capacity (vph)	0	0	0	0	0	0	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.25	0.85	0.85	0.75	0.28	0.87	0.74	0.92	0.46	0.04
Intersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 112.4											
Natural Cycle: 105											
Control Type: Actuated-Uncoordinated											
# 95th percentile volume exceeds capacity, queue may be longer.											
Queue shown is maximum after two cycles.											
Splits and Phases: 6: Main St & Publix Drwy/E Cherokee Dr											
	01	02	03	04	05	06	07	08	09	10	11
	18 s	42.5 s	27.5 s	32 s	27.5 s	42.5 s	32 s	27.5 s	42.5 s	32 s	27.5 s
	01	02	03	04	05	06	07	08	09	10	11
	18 s	42.5 s	27.5 s	32 s	27.5 s	42.5 s	32 s	27.5 s	42.5 s	32 s	27.5 s

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HCM Signalized Intersection Capacity Analysis 6: Main St & Publix Drwy/E Cherokee Dr

Build PM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	41	81	75	455	78	423	108	481	675	327	288	18
Traffic Volume (vph)	41	81	75	455	78	423	108	481	675	327	288	18
Future Volume (vph)	41	81	75	455	78	423	108	481	675	327	288	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Flt	1.00	0.85	1.00	0.85	1.00	0.85	1.00	0.85	1.00	0.85	1.00	0.85
Flt Protected	0.98	1.00	0.95	0.97	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1826	1583	1681	1714	1583	1770	1863	1583	1583	3433	1863	1583
Flt Permitted	0.98	1.00	0.95	0.97	1.00	0.48	1.00	0.48	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1826	1583	1681	1714	1583	901	1863	1583	1583	3433	1863	1583
Peak-hour factor, PHF	0.58	0.79	0.74	0.82	0.66	0.82	0.91	0.90	0.86	0.88	0.92	0.67
Adj. Flow (vph)	71	103	101	555	118	516	119	534	785	367	313	27
RTOR Reduction (vph)	0	0	87	0	0	321	0	0	170	0	0	17
Lane Group Flow (vph)	0	174	14	333	340	195	119	534	615	367	313	10
Turn Type	Split	NA	Perm	Split	NA	Perm	prn-pt	NA	pt-ov	Prot	NA	Perm
Protected Phases	4	4	4	8	8	8	5	2	28	1	6	6
Permitted Phases	4	4	4	8	8	8	2	2	28	1	6	6
Actuated Green, G (s)	15.9	15.9	25.5	25.5	25.5	25.5	44.1	35.4	60.9	13.1	39.8	39.8
Effective Green, g (s)	15.9	15.9	25.5	25.5	25.5	25.5	44.1	35.4	60.9	13.1	39.8	39.8
Actuated g/C Ratio	0.14	0.14	0.23	0.23	0.23	0.23	0.39	0.31	0.54	0.12	0.35	0.35
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.0	5.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	258	223	381	388	359	420	586	857	400	659	560	560
v/s Ratio Prot	c0.10	0.20	c0.20	0.12	0.09	0.12	0.09	c0.29	0.39	c0.11	c0.17	0.01
v/c Ratio	0.67	0.06	0.87	0.88	0.54	0.28	0.91	0.72	0.92	0.47	0.02	0.02
Uniform Delay, d1	45.8	41.8	41.9	41.9	38.3	22.4	37.0	19.3	49.1	28.2	23.6	23.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.8	0.1	19.4	19.3	1.7	0.4	19.3	3.6	25.4	1.1	0.0	0.0
Delay (s)	52.6	41.9	61.3	61.2	40.0	22.8	56.3	22.9	74.5	29.3	23.6	23.6
Level of Service	D	D	E	E	D	C	C	E	C	E	C	C
Approach Delay (s)	48.7			52.0			35.3			52.6		
Approach LOS	D			D			D			D		
Intersection Summary												
HCM 2000 Control Delay	45.2											
HCM 2000 Volume to Capacity ratio	0.85											
Actuated Cycle Length (s)	112.4											
Intersection Capacity Utilization	72.8%											
Analysis Period (min)	15											
c Critical Lane Group												

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HCM Unsignalized Intersection Capacity Analysis 7: Main St & Rope Mill Rd/E Main St

Build PM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	17	0	112	10	4	7	100	493	8	7	460	30
Traffic Volume (veh/h)	17	0	112	10	4	7	100	493	8	7	460	30
Future Volume (Veh/h)	17	0	112	10	4	7	100	493	8	7	460	30
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
Grade	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.62	0.25	0.87	0.75	0.50	0.92	0.95	0.96	0.88	0.33	0.85	0.75
Hourly flow rate (vph)	27	0	129	13	8	8	105	514	9	21	541	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage (veh)												
Upstream signal (ft)												
pK, platoon unblocked												
Vc, conflicting volume	1344	1336	561	1460	1352	518	581					
Vc1, stage 1 conf vol												
Vc2, stage 2 conf vol												
VcU, unblocked vol	1344	1336	561	1460	1352	518	581					
IC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1					
IC, 2 stage (s)												
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2					
p0 queue free %	75	100	76	82	94	99	89					
dM capacity (veh/h)	110	134	527	73	132	557	993					
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	156	29	628	602								
Volume Left	27	13	105	21								
Volume Right	129	8	9	40								
cSH	318	115	993	1043								
Volume to Capacity	0.49	0.25	0.11	0.02								
Queue Length 95th (ft)	64	23	9	2								
Control Delay (s)	26.8	46.7	2.7	0.5								
Lane LOS	D	E	A	A								
Approach Delay (s)	26.8	46.7	2.7	0.5								
Approach LOS	D	E										
Intersection Summary												
Average Delay	5.3											
Intersection Capacity Utilization	76.4%											
Analysis Period (min)	15											
ICU Level of Service	D											

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HCM Unsignalized Intersection Capacity Analysis
8: Woodstock Pkwy & Outlet Shopping Drwy/Rope Mill Rd

Build PM
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	20	35	85	22	39	80	45	237	21	61	100	11
Future Volume (veh/h)	20	35	85	22	39	80	45	237	21	61	100	11
Peak Hour Factor	0.57	0.91	0.83	0.50	0.89	0.88	0.71	0.73	0.71	0.73	0.70	0.45
Hourly flow rate (vph)	35	38	102	44	44	91	63	325	30	84	143	24
Approach Volume (veh/h)	175	175	175	179	179	179	418	418	418	251	251	251
Crossing Volume (veh/h)	271	271	271	423	423	423	157	157	157	151	151	151
High Capacity (veh/h)	1120	1120	1120	993	993	993	1225	1225	1225	1231	1231	1231
High v/c (veh/h)	0.16	0.16	0.16	0.18	0.18	0.18	0.34	0.34	0.34	0.20	0.20	0.20
Low Capacity (veh/h)	921	921	921	807	807	807	1016	1016	1016	1021	1021	1021
Low v/c (veh/h)	0.19	0.19	0.19	0.22	0.22	0.22	0.41	0.41	0.41	0.25	0.25	0.25
Intersection Summary												
Maximum v/c High							0.34					
Maximum v/c Low							0.41					
Intersection Capacity Utilization							36.6%					
ICU Level of Service							A					

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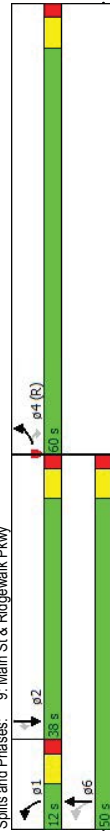
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Queues
9: Main St & Ridgewalk Pkwy

Build PM
1/20/2016

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	728	230	248	407	297	763
Future Volume (vph)	728	230	248	407	297	763
Lane Group Flow (vph)	791	256	261	457	323	942
Turn Type	Prot	Perm	pm-pt	NA	NA	Perm
Protected Phases	4	4	1	6	2	2
Permitted Phases	4	4	6	6	2	2
Detector Phase	4	4	1	6	2	2
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	10.0	22.0	22.0	22.0
Total Split (s)	60.0	60.0	12.0	50.0	38.0	38.0
Total Split (%)	54.5%	54.5%	10.9%	45.5%	34.5%	34.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	None	None	None	None
v/c Ratio	0.87	0.28	0.98	0.65	0.65	0.99
Control Delay	20.4	4.7	80.8	32.8	41.8	35.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.4	4.7	80.8	32.8	41.8	35.7
Queue Length 50th (ft)	209	0	128	253	196	191
Queue Length 95th (ft)	m253	m0	#278	356	291	#357
Internal Link Dist (ft)	1155		596	714		
Turn Bay Length (ft)			177			110
Base Capacity (vph)	910	925	267	745	541	976
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.28	0.98	0.61	0.60	0.97
Intersection Summary						
Cycle Length: 110						
Actuated Cycle Length: 110						
Offset: 0 (0%), Referenced to phase 4EBL Start of Green						
Natural Cycle: 75						
Control Type: Actuated-Coordinated						
# 95th percentile volume exceeds capacity, queue may be longer.						
Queue shown is maximum after two cycles.						
m Volume for 95th percentile queue is metered by upstream signal.						

Splits and Phases: 9: Main St & Ridgewalk Pkwy



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HCM Signalized Intersection Capacity Analysis 9: Main St & Ridgewalk Pkwy

Build PM
 1/20/2016

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	728	230	248	407	297	763
Future Volume (vph)	728	230	248	407	297	763
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1983	1770	1983	1983	1983
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1983	1770	1983	1983	1983
Peak-hour factor, PHF	0.92	0.90	0.95	0.89	0.92	0.81
Adj. Flow (vph)	791	256	261	457	323	942
RTOR Reduction (vph)	0	111	0	0	0	533
Lane Group Flow (vph)	791	145	261	457	323	409
Turn Type	Prot	Perm	pm-pt	NA	NA	Perm
Protected Phases	4	1	6	2		
Permitted Phases	4	6		2		
Actuated Green, G (s)	56.6	56.6	41.4	41.4	29.4	29.4
Effective Green, g (s)	56.6	56.6	41.4	41.4	29.4	29.4
Actuated g/C Ratio	0.51	0.51	0.38	0.38	0.27	0.27
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	5.0	5.0	5.0
Lane Grp Cap (vph)	910	814	266	701	497	423
v/s Ratio Prot	0.45	0.05	0.25	0.17		
v/s Ratio	0.87	0.18	0.98	0.65	0.65	0.26
Uniform Delay, d1	23.4	14.3	35.0	28.3	35.7	39.8
Progression Factor	0.73	1.56	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.0	49.7	2.9	4.0	35.5
Delay (s)	18.2	22.3	84.7	31.3	39.7	75.3
Level of Service	B	C	F	C	D	E
Approach Delay (s)	19.2		50.7	66.3		
Approach LOS	B		D	E		
Intersection Summary						
HCM 2000 Control Delay		46.3		HCM 2000 Level of Service		D
HCM 2000 Volume to Capacity ratio		0.95				
Actuated Cycle Length (s)		110.0		Sum of lost time (s)		18.0
Intersection Capacity Utilization		84.7%		ICU Level of Service		E
Analysis Period (min)		15				
c Critical Lane Group						

1/19/2016 Baseline

Synchro 9 Report
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HCM Unsignalized Intersection Capacity Analysis 10: Site Driveway 5/Site Driveway 1 & Ridgewalk Pkwy

Build PM
 1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (veh/h)	0	1205	121	0	1266	65	0	0	89	0	0	152
Future Volume (Veh/h)	0	1205	121	0	1266	65	0	0	89	0	0	152
Sign Control	Free	Free	Free	Free	Free	Free	Yield	Yield	Yield	Yield	Yield	Yield
Grade	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.92	0.91	0.92	0.92	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1324	132	0	1472	71	0	0	97	0	0	165
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)		None			None							
Median type												
Median storage (veh)												
Upstream signal (ft)		635			563							
pk. platoon unblocked	0.75			0.82			0.84	0.84	0.82	0.84	0.84	0.75
VC, conflicting volume	1472			1324			2060	2796	662	2134	2796	736
VC1, stage 1 conf vol												
VC2, stage 2 conf vol												
VCU, unblocked vol	949			948			891	1771	138	980	1771	0
IC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
IC, 2 stage (s)												
IF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	87	100	100	80
dm capacity (veh/h)	536			588			158	69	723	148	69	808
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	662	662	132	736	736	71	97	165				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	0	0	132	0	0	71	97	165				
CSH	1700	1700	1700	1700	1700	1700	723	808				
Volume to Capacity	0.39	0.39	0.08	0.43	0.43	0.04	0.13	0.20				
Queue Length 95th (ft)	0	0	0	0	0	0	12	19				
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.7	10.6				
Lane LOS							B	B				
Approach Delay (s)	0.0			0.0			10.7	10.6				
Approach LOS				B			B	B				
Intersection Summary												
Average Delay				0.9								
Intersection Capacity Utilization				51.1%								A
Analysis Period (min)				15								

1/19/2016 Baseline

Synchro 9 Report
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HCM Unsignalized Intersection Capacity Analysis 11: Ridgewalk Pkwy & Site Driveway 3

Build PM
 1/20/2016

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↔	↔↔	↔↔	↔	↔
Traffic Volume (veh/h)	0	965	915	91	0	152
Future Volume (Veh/h)	0	965	915	91	0	152
Sign Control		Free	Free	Free	Yield	
Grade		0%	0%	0%	0%	
Peak Hour Factor	0.92	0.91	0.86	0.92	0.92	0.92
Hourly flow rate (vph)	0	1060	1064	99	0	165
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)		964	1235			
Upstream signal (ft)				0.80		
pX platoon unblocked				1594		
VC conflicting volume	1064					532
VC1 stage 1 conf vol						
VC2 stage 2 conf vol	1064					532
VCu unblocked vol	4.1					6.9
IC single (s)						
IC 2 stage (s)						
IF (s)	2.2				3.5	3.3
p0 queue free %	100				100	66
CM capacity (veh/h)	651				135	492
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	530	530	532	532	99	165
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	99	165
cSH	1700	1700	1700	1700	1700	492
Volume to Capacity	0.31	0.31	0.31	0.31	0.06	0.34
Queue Length 95th (ft)	0	0	0	0	0	37
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	16.0
Lane LOS					C	C
Approach Delay (s)	0.0		0.0			16.0
Approach LOS			C			C
Intersection Summary						
Average Delay	1.1					
Intersection Capacity Utilization	41.4%			ICU Level of Service		
Analysis Period (min)	15			A		

1/19/2016 Baseline

Synchro 9 Report
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HCM Unsignalized Intersection Capacity Analysis 12: Ridge Tr & Site Driveway 4

Build PM
 1/20/2016

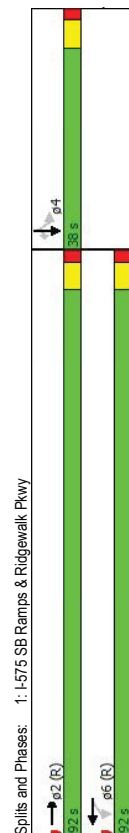
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	221	13	10	188	240	99
Future Volume (Veh/h)	221	13	10	188	240	99
Sign Control	Stop	Free	Free	Free	Free	Free
Grade	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	240	14	11	204	261	108
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None	None		
Median storage (veh)						
Upstream signal (ft)					362	
pX platoon unblocked	0.93	0.93	0.93			
VC conflicting volume	541	315	369			
VC1 stage 1 conf vol						
VC2 stage 2 conf vol						
VCu unblocked vol	469	226	284			
IC single (s)	6.4	6.2	4.1			
IC 2 stage (s)						
IF (s)	3.5	3.3	2.2			
p0 queue free %	53	98	99			
CM capacity (veh/h)	509	757	1189			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	254	215	369			
Volume Left	240	11	0			
Volume Right	14	0	108			
cSH	519	1189	1700			
Volume to Capacity	0.49	0.01	0.22			
Queue Length 95th (ft)	67	1	0			
Control Delay (s)	18.4	0.5	0.0			
Lane LOS	C	A				
Approach Delay (s)	18.4	0.5	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay	5.7					
Intersection Capacity Utilization	38.4%			ICU Level of Service		
Analysis Period (min)	15			A		

1/19/2016 Baseline

Synchro 9 Report
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Queues 1: I-575 SB Ramps & Ridgewalk Pkwy Build SAT 1/20/2016

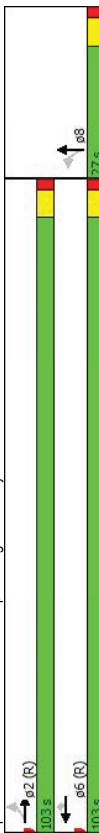
	EBT	WBL	WBT	SBT	SBR	
Lane Group						
Lane Configurations	EB	WB	WB	SB	SB	
Traffic Volume (vph)	132	969	184	3	22	
Future Volume (vph)	132	969	184	3	22	
Lane Group Flow (vph)	329	999	204	686	44	
Turn Type	NA	Perm	NA	NA	Perm	
Protected Phases	2	6	6	4	4	
Permitted Phases	2	6	6	4	4	
Detector Phase	2	6	6	4	4	
Switch Phase						
Minimum Initial (s)	15.0	15.0	15.0	6.0	6.0	
Minimum Split (s)	21.3	22.0	22.0	13.0	13.0	
Total Split (%)	92.0	92.0	92.0	38.0	38.0	
Total Split (%)	70.8%	70.8%	70.8%	29.2%	29.2%	
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	None	None	
v/c Ratio	0.28	1.51	0.17	1.59	0.11	
Control Delay	7.2	261.0	6.9	308.9	19.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.2	261.0	6.9	308.9	19.8	
Queue Length 50th (ft)	74	~186	35	~822	10	
Queue Length 95th (ft)	106	#1403	65	277	15	
Internal Link Dist (ft)	563	559	412			
Turn Bay Length (ft)	1170	660	1228	432	407	
Base Capacity (vph)	0	0	0	0	0	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.28	1.51	0.17	1.59	0.11	
Intersection Summary						
Cycle Length: 130						
Actuated Cycle Length: 130						
Offset: 14 (11%), Referenced to phase 2 EBT and 6 WBT/L Start of Green						
Natural Cycle: 150						
Control Type: Actuated-Coordinated						
Volume exceeds capacity, queue is theoretically infinite.						
Queue shown is maximum after two cycles.						
# 95th percentile volume exceeds capacity, queue may be longer.						
Queue shown is maximum after two cycles.						



HCM Signalized Intersection Capacity Analysis 1: I-575 SB Ramps & Ridgewalk Pkwy Build SAT 1/20/2016

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations												
Traffic Volume (vph)	0	132	110	969	184	0	0	0	0	556	3	22
Future Volume (vph)	0	132	110	969	184	0	0	0	0	556	3	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1731	1770	1863	1770	1863	1770	1863	1770	1863	1770	1863	1770
Flt Permitted	1.00	0.54	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1731	1003	1863	1731	1003	1863	1731	1003	1863	1731	1003	1863
Peak-hour factor, PHF	0.92	0.84	0.64	0.97	0.90	0.92	0.92	0.92	0.92	0.82	0.38	0.50
Adj. Flow (vph)	0	157	172	999	204	0	0	0	0	678	8	44
RTOR Reduction (vph)	0	30	0	0	0	0	0	0	0	0	0	21
Lane Group Flow (vph)	0	299	0	999	204	0	0	0	0	0	686	23
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases	2	6	6	4	4	4	4	4	4	4	4	4
Permitted Phases	2	6	6	4	4	4	4	4	4	4	4	4
Actuated Green, G (s)	85.7	85.7	85.7	85.7	85.7	85.7	85.7	85.7	85.7	85.7	85.7	85.7
Effective Green, g (s)	85.7	85.7	85.7	85.7	85.7	85.7	85.7	85.7	85.7	85.7	85.7	85.7
Actuated g/C Ratio	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	1141	661	1228	661	1228	661	1228	661	1228	661	1228	661
v/s Ratio Prot	0.17	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
v/c Ratio Perm	0.26	1.51	0.17	1.51	0.17	1.51	0.17	1.51	0.17	1.51	0.17	1.51
Uniform Delay, d1	9.1	22.1	8.5	22.1	8.5	22.1	8.5	22.1	8.5	22.1	8.5	22.1
Progression Factor	1.00	0.96	0.77	0.96	0.77	0.96	0.77	0.96	0.77	0.96	0.77	0.96
Incremental Delay, d2	0.6	237.3	0.3	237.3	0.3	237.3	0.3	237.3	0.3	237.3	0.3	237.3
Delay (s)	9.7	258.5	6.8	258.5	6.8	258.5	6.8	258.5	6.8	258.5	6.8	258.5
Level of Service	A	F	A	F	A	F	A	F	A	F	A	F
Approach Delay (s)	9.7	215.8	0.0	215.8	0.0	215.8	0.0	215.8	0.0	215.8	0.0	215.8
Approach LOS	A	F	A	F	A	F	A	F	A	F	A	F
Intersection Summary												
HCM 2000 Control Delay	215.3	HCM 2000 Level of Service	F									
HCM 2000 Volume to Capacity ratio	1.53											
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.6									
Intersection Capacity Utilization	90.6%	ICU Level of Service	E									
Analysis Period (min)	15											
c Critical Lane Group												

	EBL	EBT	WBT	WBR	NBT	NBR	
Lane Group							
Lane Configurations	EBL	EBT	WBT	WBR	NBT	NBR	
Traffic Volume (vph)	28	663	1032	482	0	1141	
Future Volume (vph)	28	663	1032	482	0	1141	
Future Volume (vph)	28	663	1032	482	0	1141	
Future Volume (vph)	28	663	1032	482	0	1141	
Ideal Flow (vphpl)	41	705	1200	554	93	1268	
Turn Type	Perm	NA	Perm	NA	Free	Free	
Protected Phases	2	2	6	6	8	8	
Permitted Phases	2	2	6	6	8	8	
Detector Phase	2	2	6	6	8	8	
Switch Phase	2	2	6	6	8	8	
Minimum Initial (s)	15.0	15.0	6.0	6.0	5.7	5.7	
Minimum Split (s)	22.0	22.0	22.0	22.0	12.0	12.0	
Minimum Split (%)	103.0	103.0	103.0	103.0	27.0	27.0	
Total Split (%)	79.2%	79.2%	79.2%	79.2%	20.8%	20.8%	
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	4.3	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	
v/c Ratio	0.12	0.47	0.42	0.40	0.56	0.80	
Control Delay	0.6	5.2	3.3	0.9	68.9	4.4	
Queue Delay	0.0	0.7	0.4	0.4	6.1	2.9	
Total Delay	0.6	6.0	3.7	1.3	75.1	7.3	
Queue Length 50th (ft)	1	116	76	0	76	0	
Queue Length 95th (ft)	m1	m17	m168	m21	129	0	
Internal Link Dist (ft)	559	534			615		
Turn Bay Length (ft)	420		225				
Base Capacity (vph)	330	1508	2865	1387	281	1583	
Starvation Cap Reductn	0	458	981	401	0	0	
Spillback Cap Reductn	0	249	279	0	140	211	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.12	0.67	0.64	0.56	0.66	0.92	
Intersection Summary							
Cycle Length: 130							
Actuated Cycle Length: 130							
Offset: 76 (58%), Referenced to phase 2:EBTL and 6:WBT. Start of Green							
Natural Cycle: 40							
Control Type: Actuated-Coordinated							
m Volume for 95th percentile queue is metered by upstream signal.							



	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	28	663	0	0	1092	482	81	0	1141	0	0	0
Future Volume (vph)	28	663	0	0	1092	482	81	0	1141	0	0	0
Future Volume (vph)	28	663	0	0	1092	482	81	0	1141	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	1863	3539	1583	1770	1583	1770	1583	1770	1583	1770	1583
Flt Permitted	0.22	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Satd. Flow (perm)	408	1863	3539	1583	1770	1583	1770	1583	1770	1583	1770	1583
Peak-hour factor, PHF	0.69	0.94	0.92	0.92	0.91	0.87	0.87	0.92	0.90	0.92	0.92	0.92
Adj. Flow (vph)	41	705	0	0	1200	554	93	0	1268	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	105	0	0	0	0	0	0
Lane Group Flow (vph)	41	705	0	0	1200	449	0	93	1268	0	0	0
Turn Type	Perm	NA	NA	NA	Perm	Perm	Perm	NA	Free	Free	Free	Free
Protected Phases	2	2	6	6	8	8	8	8	8	8	8	8
Permitted Phases	2	2	6	6	8	8	8	8	8	8	8	8
Actuated Green, G (s)	105.3	105.3	105.3	105.3	105.3	105.3	105.3	12.1	130.0	12.1	130.0	130.0
Effective Green, g (s)	105.3	105.3	105.3	105.3	105.3	105.3	105.3	12.1	130.0	12.1	130.0	130.0
Actuated g/C Ratio	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.09	1.00	0.09	1.00	1.00
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	330	1509	2866	1282	164	1583	164	1583	1583	164	1583	1583
v/s Ratio Prot	0.10	0.38	0.34	0.34	0.34	0.34	0.34	0.05	c0.80	0.05	c0.80	c0.80
v/c Ratio	0.12	0.47	0.42	0.42	0.42	0.42	0.42	0.05	0.57	0.05	0.57	0.80
Uniform Delay, d1	2.6	3.8	3.6	3.3	3.6	3.3	3.6	56.4	0.0	56.4	0.0	0.0
Progression Factor	0.16	1.21	0.82	1.79	0.82	1.79	0.82	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.2	0.3	0.2	0.3	0.2	4.4	4.4	4.4	4.4	4.4
Delay (s)	0.5	4.7	3.1	6.2	3.1	6.2	3.1	60.9	60.9	60.9	60.9	60.9
Level of Service	A	A	A	A	A	A	A	E	A	E	A	A
Approach Delay (s)	4.4	4.4	4.1	4.1	4.1	4.1	4.1	8.2	8.2	8.2	8.2	8.2
Approach LOS	A	A	A	A	A	A	A	A	A	A	A	A
Intersection Summary												
HCM 2000 Control Delay			5.6									A
HCM 2000 Volume to Capacity ratio			0.89									A
Actuated Cycle Length (s)			130.0									12.6
Intersection Capacity Utilization			90.6%									E
Analysis Period (min)			15									
c Critical Lane Group												

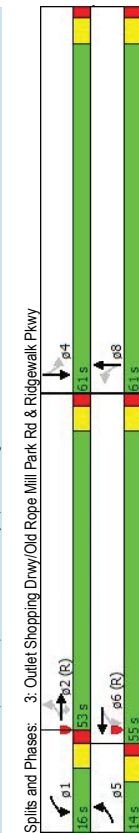
Queues

3: Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

Build SAT
1/20/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	98	935	775	171	919	523	36	49	17
Traffic Volume (vph)	98	935	775	171	919	523	36	49	17
Future Volume (vph)	98	935	775	171	919	523	36	49	17
Ideal Flow (vphpl)	114	1408	613	244	1087	608	266	67	186
Turn Type	pm-pt	NA	Perm	pm-pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	2	2	6	8	8	4	4
Permitted Phases	2	2	2	2	1	6	8	4	4
Detector Phase	5	2	2	2	1	6	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Total Split (%)	14.0	53.0	53.0	16.0	55.0	61.0	61.0	61.0	61.0
Total Split (%)	10.8%	40.8%	40.8%	12.3%	42.3%	46.9%	46.9%	46.9%	46.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?									
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.66	1.16	0.67	1.26	0.82	1.27	0.34	0.16	0.24
Control Delay	37.4	112.0	3.9	189.4	26.8	169.0	10.3	24.7	5.6
Queue Delay	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.4	112.1	4.0	189.4	26.8	169.0	10.3	24.7	5.6
Queue Length 50th (ft)	38	~760	0	~214	229	~644	50	35	11
Queue Length 95th (ft)	m76	#690	24	#252	271	#615	58	54	33
Internal Link Dist (ft)	534			686		232		281	
Turn Bay Length (ft)	275	410	268					201	
Base Capacity (vph)	174	1209	912	193	1328	480	789	409	779
Starvation Cap Reductn	0	11	19	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	1.18	0.69	1.26	0.82	1.27	0.34	0.16	0.24

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 126 (97%), Referenced to phase 2:EBTL and 6:WBTL Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
m Volume for 95th percentile queue is metered by upstream signal.	



HCM Signalized Intersection Capacity Analysis

3: Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

Build SAT
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBT
Lane Configurations	98	935	775	171	919	55	523	36	197	49
Traffic Volume (vph)	98	935	775	171	919	55	523	36	197	49
Future Volume (vph)	98	935	775	171	919	55	523	36	197	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98	0.85	1.00	0.99	1.00	0.88	1.00	0.87	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3320	1441	1770	3507	1770	1638	1770	1618	1618
Flt Permitted	0.10	1.00	1.00	0.08	1.00	0.61	1.00	0.52	1.00	1.00
Satd. Flow (perm)	181	3320	1441	152	3507	1135	1638	968	1618	1618
Peak-hour factor, PHF	0.86	0.77	0.96	0.70	0.90	0.83	0.86	0.69	0.92	0.73
Adj. Flow (vph)	114	1214	807	244	1021	66	608	52	214	67
RTOR Reduction (vph)	0	10	391	0	4	0	0	97	0	94
Lane Group Flow (vph)	114	1398	222	244	1083	0	608	169	0	67
Turn Type	pm-pt	NA	Perm	pm-pt	NA	Perm	NA	Perm	NA	NA
Protected Phases	5	2	2	6	1	6	8	4	4	4
Permitted Phases	2	2	2	6	1	6	8	4	4	4
Actuated Green, G (s)	54.9	47.0	47.0	59.1	49.1	55.0	55.0	55.0	55.0	55.0
Effective Green, g (s)	54.9	47.0	47.0	59.1	49.1	55.0	55.0	55.0	55.0	55.0
Actuated g/C Ratio	0.42	0.36	0.36	0.45	0.38	0.42	0.42	0.42	0.42	0.42
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	173	1200	520	193	1324	480	693	409	684	684
v/s Ratio Prot	0.04	0.42	0.15	c0.10	0.31	c0.54	0.10	0.06	0.06	0.06
v/s Ratio Perm	0.24	1.17	0.43	1.26	0.82	1.27	0.24	0.16	0.13	0.13
Uniform Delay, d1	27.6	41.5	31.3	36.9	36.4	37.5	24.1	23.2	22.9	22.9
Progression Factor	1.05	0.77	0.34	1.55	0.89	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.9	81.9	2.0	150.1	5.1	135.7	0.2	0.2	0.1	0.1
Delay (s)	35.9	113.7	12.8	207.4	26.7	173.2	24.3	23.4	23.0	23.0
Level of Service	D	F	B	F	C	F	C	C	C	C
Approach Delay (s)	80.6	59.8	59.8	127.9	59.8	127.9	59.8	23.1	23.1	23.1
Approach LOS	F	E	E	F	E	F	E	C	C	C

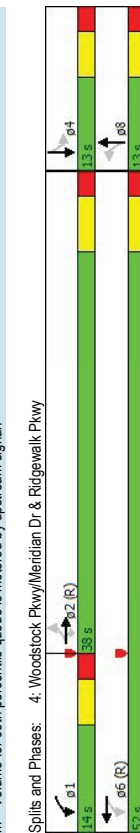
Intersection Summary	
HCM 2000 Control Delay	80.4
HCM 2000 Volume to Capacity ratio	1.29
Actuated Cycle Length (s)	130.0
Intersection Capacity Utilization	102.4%
Analysis Period (min)	15
c Critical Lane Group	

Queues
4: Woodstock Pkwy/Meridian Dr & Ridgeway Pkwy

Build SAT
1/20/2016

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	12	1130	55	231	1142	53	2	7	2
Traffic Volume (vph)	12	1130	55	231	1142	53	2	7	2
Future Volume (vph)	12	1130	55	231	1142	53	2	7	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	6	6	8	8	4	4
Permitted Phases	2	2	2	6	6	8	8	4	4
Detector Phase	2	2	2	6	6	8	8	4	4
Switch Phase	2	2	2	6	6	8	8	4	4
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	6.4	6.4	6.0	6.0
Minimum Split (s)	22.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Minimum Split (%)	38.0	38.0	38.0	14.0	52.0	13.0	13.0	13.0	13.0
Total Split (%)	58.5%	58.5%	58.5%	21.5%	80.0%	20.0%	20.0%	20.0%	20.0%
Yellow Time (s)	4.3	4.3	4.3	3.6	4.3	3.6	3.6	3.6	3.6
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.08	0.76	0.09	0.75	0.50	0.41	0.61	0.22	0.22
Control Delay	9.8	12.9	2.0	21.0	4.5	35.7	13.1	25.5	25.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.8	12.9	2.0	21.0	4.5	35.7	13.1	25.5	25.5
Queue Length 50th (ft)	6	25.4	3	59	83	23	3	5	5
Queue Length 95th (ft)	m6	m233	m2	m69	m80	54	0	12	12
Internal Link Dist (ft)	686	555	555	531	144	144	144	144	144
Turn Bay Length (ft)	110	110	90	187	105	105	105	105	105
Base Capacity (vph)	204	1753	854	344	2504	157	371	105	105
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.76	0.09	0.74	0.50	0.39	0.60	0.21	0.21

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 65	
Offset: 9 (14%), Referenced to phase 2:EBTL and 6:WBTL. Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
m Volume for 95th percentile queue is metered by upstream signal.	



HCM Signalized Intersection Capacity Analysis
4: Woodstock Pkwy/Meridian Dr & Ridgeway Pkwy

Build SAT
1/20/2016

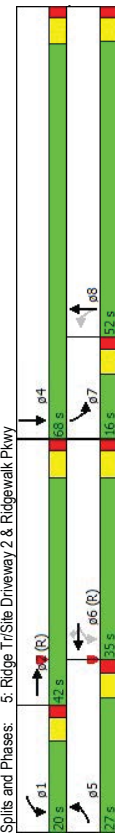
	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	12	1130	55	231	1142	53	2	198	7	2
Traffic Volume (vph)	12	1130	55	231	1142	53	2	198	7	2
Future Volume (vph)	12	1130	55	231	1142	53	2	198	7	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6	5.6
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Flt	1.00	1.00	0.85	1.00	1.00	1.00	0.86	1.00	0.94	0.94
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.98
Satd. Flow (prot)	1770	3539	1583	1770	3538	1770	1593	1770	1725	1725
Flt Permitted	0.22	1.00	1.00	0.11	1.00	0.74	1.00	0.74	1.00	0.49
Satd. Flow (perm)	412	3539	1583	197	3538	1384	1593	859	859	859
Peak-hour factor, PHF	0.69	0.85	0.73	0.91	0.91	0.25	0.86	0.25	0.92	0.75
Adj. Flow (vph)	17	1329	75	254	1255	4	62	8	215	9
RTOR Reduction (vph)	0	0	38	0	0	0	192	0	0	8
Lane Group Flow (vph)	17	1329	37	254	1259	0	62	31	0	14
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA	NA
Protected Phases	2	2	2	6	6	8	8	4	4	4
Permitted Phases	2	2	2	6	6	8	8	4	4	4
Actuated Green, G (s)	32.2	32.2	32.2	46.0	46.0	7.1	7.1	7.1	7.1	7.1
Effective Green, g (s)	32.2	32.2	32.2	46.0	46.0	7.1	7.1	7.1	7.1	7.1
Actuated g/C Ratio	0.50	0.50	0.50	0.71	0.71	0.11	0.11	0.11	0.11	0.11
Clearance Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6	5.6
Vehicle Extension (s)	5.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	204	1753	784	337	2503	151	174	93	93	93
v/s Ratio Prot	0.38	0.02	0.02	c0.09	0.36	c0.04	c0.02	c0.02	c0.02	c0.02
v/s Ratio Perm	0.04	0.76	0.05	0.75	0.50	0.41	0.18	0.15	0.15	0.15
Uniform Delay, d1	8.6	13.3	8.5	13.2	4.3	27.0	26.3	26.2	26.2	26.2
Progression Factor	1.05	0.93	1.00	1.34	0.94	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.3	0.0	4.9	0.4	1.8	0.5	0.8	0.8	0.8
Delay (s)	9.1	12.7	8.5	22.6	4.4	28.8	26.8	27.0	27.0	27.0
Level of Service	A	B	A	C	A	C	C	C	C	C
Approach Delay (s)	12.4			7.5		27.2		27.0		
Approach LOS	B			A		C		C		
Intersection Summary										
HCM 2000 Control Delay				11.5		HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio				0.75						
Actuated Cycle Length (s)				65.0		Sum of lost time (s)		17.5		
Intersection Capacity Utilization				71.6%		ICU Level of Service		C		
Analysis Period (min)				15						
c Critical Lane Group										

Queues
5: Ridge Tr/Site Driveway 2 & Ridgewalk Pkwy

Build SAT
1/20/2016

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	TT	TT	TT	TT	TT	TT	TT	TT
Traffic Volume (vph)	603	477	167	698	136	334	13	294
Future Volume (vph)	603	477	167	698	136	334	13	294
Lane Group Flow (vph)	655	757	283	793	148	0	501	320
Turn Type	Prot	NA	pm-pt	NA	Perm	Perm	NA	Prot
Protected Phases	5	2	1	6	6	8	7	4
Permitted Phases	5	2	1	6	6	8	7	4
Detector Phase	5	2	1	6	6	8	7	4
Switch Phase	5	2	1	6	6	8	7	4
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	6.0	6.0	5.0
Minimum Split (s)	11.0	22.0	11.0	22.0	22.0	12.0	12.0	24.0
Total Split (%)	27.0	42.0	20.0	35.0	35.0	52.0	52.0	68.0
Total Split (%)	20.8%	32.3%	15.4%	26.9%	26.9%	40.0%	40.0%	52.3%
Yellow Time (s)	4.0	4.3	3.6	4.3	4.3	3.6	3.6	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.3	5.6	6.3	6.3	5.6	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	None	C-Max	None	C-Max	None	None	None	None
Recall Mode	1.18	0.78	1.02	1.02	0.31	1.28	1.21	0.30
v/c Ratio	147.2	36.1	88.3	87.7	11.8	180.2	174.5	3.7
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	147.2	36.1	88.3	87.7	11.8	180.2	174.5	3.7
Queue Length 50th (ft)	~349	256	~183	~359	14	~534	~169	6
Queue Length 95th (ft)	#474	307	161	m#443	m31	#756	#267	52
Internal Link Dist (ft)	483	150	884	884	282	215	215	215
Turn Bay Length (ft)	145	150	100	100	391	264	891	891
Base Capacity (vph)	554	968	277	781	484	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.18	0.78	1.02	1.02	0.31	1.28	1.21	0.30

Intersection Summary	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Cycle Length: 130	1.18	0.78	1.02	1.02	0.31	1.28	1.21	0.30
Actuated Cycle Length: 130	1.18	0.78	1.02	1.02	0.31	1.28	1.21	0.30
Offset: 98 (75%), Referenced to phase 2 EBT and 6: WBT. Start of Green	1.18	0.78	1.02	1.02	0.31	1.28	1.21	0.30
Natural Cycle: 130	1.18	0.78	1.02	1.02	0.31	1.28	1.21	0.30
Control Type: Actuated-Coordinated	1.18	0.78	1.02	1.02	0.31	1.28	1.21	0.30
Volume exceeds capacity, queue is theoretically infinite.	1.18	0.78	1.02	1.02	0.31	1.28	1.21	0.30
Queue shown is maximum after two cycles.	1.18	0.78	1.02	1.02	0.31	1.28	1.21	0.30
# 95th percentile volume exceeds capacity, queue may be longer.	1.18	0.78	1.02	1.02	0.31	1.28	1.21	0.30
Queue shown is maximum after two cycles.	1.18	0.78	1.02	1.02	0.31	1.28	1.21	0.30
m Volume for 95th percentile queue is metered by upstream signal.	1.18	0.78	1.02	1.02	0.31	1.28	1.21	0.30



HCM Signalized Intersection Capacity Analysis
5: Ridge Tr/Site Driveway 2 & Ridgewalk Pkwy

Build SAT
1/20/2016

Movement	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	TT	TT	TT	TT	TT	TT	TT	TT
Traffic Volume (vph)	603	477	176	698	136	334	13	294
Future Volume (vph)	603	477	176	698	136	334	13	294
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.3	5.6	6.3	6.3	5.6	6.0	6.0
Lane Util. Factor	0.97	0.95	1.00	0.95	1.00	1.00	0.97	1.00
Flt	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.86
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3433	3368	1770	3539	1583	1756	3433	1597
Flt Permitted	0.95	1.00	0.19	1.00	1.00	0.59	0.95	1.00
Satd. Flow (perm)	3433	3368	359	3539	1583	1086	3433	1597
Peak-hour factor, PHF	0.92	0.93	0.72	0.59	0.88	0.92	0.69	0.92
Adj. Flow (vph)	655	513	244	283	793	148	423	14
RTOR Reduction (vph)	0	44	0	0	115	0	4	0
Lane Group Flow (vph)	655	713	0	283	793	33	0	497
Turn Type	Prot	NA	pm-pt	NA	Perm	Perm	Prot	NA
Protected Phases	5	2	1	6	6	8	7	4
Permitted Phases	5	2	1	6	6	8	7	4
Actuated Green, G (s)	21.0	35.7	43.1	28.7	28.7	46.4	10.0	62.0
Effective Green, g (s)	21.0	35.7	43.1	28.7	28.7	46.4	10.0	62.0
Actuated g/C Ratio	0.16	0.27	0.33	0.22	0.22	0.36	0.08	0.48
Clearance Time (s)	6.0	6.3	5.6	6.3	6.3	5.6	6.0	6.0
Vehicle Extension (s)	3.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0
Lane Grp Cap (vph)	554	924	275	781	349	387	264	761
v/s Ratio Prot	c0.19	0.21	c0.23	0.11	0.22	c0.46	c0.09	0.08
v/s Ratio Perm	1.18	0.77	1.03	1.02	0.09	1.28	1.21	0.17
Uniform Delay, d1	54.5	43.4	37.2	50.6	40.3	41.8	60.0	19.4
Progression Factor	1.13	0.78	1.22	1.15	2.90	1.00	1.00	1.00
Incremental Delay, d2	95.8	4.8	53.6	31.1	0.4	146.4	125.2	0.1
Delay (s)	157.1	38.5	99.1	89.2	117.4	188.2	185.2	19.5
Level of Service	F	D	F	F	F	F	F	B
Approach Delay (s)	93.5	94.9	188.2	188.2	188.2	188.2	188.2	110.4
Approach LOS	F	F	F	F	F	F	F	F

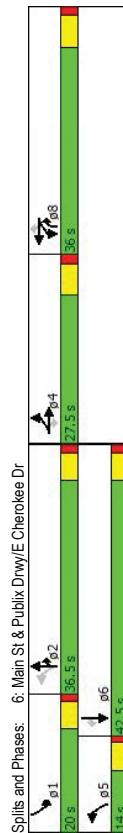
Intersection Summary	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
HCM 2000 Control Delay	109.4	109.4	109.4	109.4	109.4	109.4	109.4	109.4
HCM 2000 Volume to Capacity ratio	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19
Actuated Cycle Length (s)	130.0	130.0	130.0	130.0	130.0	130.0	130.0	130.0
Intersection Capacity Utilization	93.1%	93.1%	93.1%	93.1%	93.1%	93.1%	93.1%	93.1%
Analysis Period (min)	15	15	15	15	15	15	15	15
c Critical Lane Group								

Queues
6: Main St & Publix Drwy/E Cherokee Dr

Build SAT
1/20/2016

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4
Traffic Volume (vph)	59	59	517	62	269	76	307	422	315	327
Future Volume (vph)	59	59	517	62	269	76	307	422	315	327
Ideal Flow (vphpl)	142	94	326	329	292	84	357	449	354	355
Turn Type	NA	Perm	Split	NA	Perm	pm-pt	NA	pt-ov	Prot	NA
Protected Phases	4	4	8	8	8	5	2	2	8	1
Permitted Phases	4	4	8	8	8	5	2	2	8	1
Detector Phase	4	4	8	8	8	5	2	2	8	1
Switch Phase	4	4	8	8	8	5	2	2	8	1
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	15.0	8.0	15.0	15.0
Minimum Split (s)	27.5	27.5	27.5	27.5	14.0	26.0	14.0	32.0	32.0	32.0
Total Split (%)	27.5	27.5	36.0	36.0	36.0	14.0	36.5	20.0	42.5	42.5
Total Split (%)	22.9%	22.9%	30.0%	30.0%	30.0%	11.7%	30.4%	16.7%	35.4%	35.4%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.0	1.5	1.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.0	5.5	5.5
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	None	None	Min	Min
v/c Ratio	0.58	0.26	0.76	0.76	0.47	0.23	0.80	0.44	0.73	0.58
Control Delay	53.4	1.8	49.3	48.7	6.8	20.9	52.2	2.1	53.8	35.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Length	53.4	1.8	49.3	48.7	6.8	20.9	52.2	2.1	53.8	35.4
Queue Length 50th (ft)	93	0	209	211	0	33	230	0	121	209
Queue Length 95th (ft)	151	0	4381	247	68	339	25	204	332	0
Internal Link Dist (ft)	33	0	935	935	546	546	546	494	494	494
Turn Bay Length (ft)	401	480	518	526	690	378	593	1166	529	708
Base Capacity (vph)	0	0	0	0	0	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.20	0.63	0.63	0.42	0.22	0.60	0.39	0.67	0.50

Intersection Summary										
Cycle Length: 120										
Actuated Cycle Length: 100.5										
Natural Cycle: 105										
Control Type: Actuated-Uncoordinated										
# 95th percentile volume exceeds capacity, queue may be longer.										
Queue shown is maximum after two cycles.										



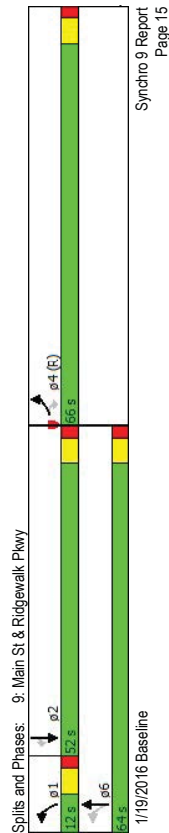
HCM Signalized Intersection Capacity Analysis
6: Main St & Publix Drwy/E Cherokee Dr

Build SAT
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4	4
Traffic Volume (vph)	52	59	59	517	62	269	76	307	422	315	327
Future Volume (vph)	52	59	59	517	62	269	76	307	422	315	327
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.0	5.5	5.5
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	0.85
Flt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.98	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1817	1583	1681	1708	1583	1770	1863	1583	1863	1863	1583
Flt Permitted	0.98	1.00	0.95	0.97	1.00	0.47	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1817	1583	1681	1708	1583	880	1863	1583	1863	1863	1583
Peak-hour factor, PHF	0.73	0.83	0.63	0.92	0.67	0.92	0.91	0.86	0.94	0.89	0.92
Adj. Flow (vph)	71	71	94	562	93	292	84	357	449	354	355
RTOR Reduction (vph)	0	0	81	0	0	218	0	0	223	0	21
Lane Group Flow (vph)	0	142	13	326	329	74	84	357	226	354	355
Turn Type	Split	NA	Perm	Split	NA	Perm	pm-pt	NA	pt-ov	Prot	NA
Protected Phases	4	4	4	8	8	8	5	2	2	8	1
Permitted Phases	4	4	4	8	8	8	5	2	2	8	1
Actuated Green, G (s)	13.6	13.6	25.5	25.5	25.5	31.9	25.4	50.9	14.2	33.1	33.1
Effective Green, g (s)	13.6	13.6	25.5	25.5	25.5	31.9	25.4	50.9	14.2	33.1	33.1
Actuated g/C Ratio	0.13	0.13	0.25	0.25	0.25	0.32	0.25	0.50	0.14	0.33	0.33
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.0	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	244	212	423	430	398	334	467	796	481	609	517
v/s Ratio Prot	0.08	0.08	0.19	0.19	0.19	0.02	0.19	0.14	0.10	0.19	0.01
v/s Ratio Perm	0.01	0.01	0.01	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.01
v/s Ratio	0.58	0.06	0.77	0.77	0.77	0.18	0.25	0.76	0.28	0.74	0.58
Uniform Delay, d1	41.1	38.2	35.1	35.1	29.7	25.0	35.1	14.6	41.7	28.3	23.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.5	0.1	8.4	7.9	0.2	0.4	8.6	0.4	5.8	2.2	0.0
Delay (s)	44.6	38.3	43.6	43.0	29.9	25.4	43.7	15.0	47.5	30.5	23.1
Level of Service	D	D	D	D	C	C	C	B	D	C	C
Approach Delay (s)	42.1			39.2			27.5		38.3		
Approach LOS	D			D			C		D		

Intersection Summary										
HCM 2000 Control Delay										
HCM 2000 Volume to Capacity ratio										
Actuated Cycle Length (s)										
Intersection Capacity Utilization										
Analysis Period (min)										
c Critical Lane Group										

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	622	190	196	245	335	738
Future Volume (vph)	622	190	196	245	335	738
Lane Group Flow (vph)	715	238	223	272	376	839
Turn Type	Prot	Perm	pm-pt	NA	NA	Perm
Protected Phases	4	1	6	2	2	2
Permitted Phases	4	4	1	6	2	2
Detector Phase	4	4	1	6	2	2
Switch Phase	4	4	1	6	2	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	10.0	22.0	22.0	22.0
Total Split (s)	66.0	66.0	12.0	64.0	52.0	52.0
Total Split (%)	50.8%	50.8%	9.2%	49.2%	40.0%	40.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?						
Recall Mode						
C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.82	0.27	0.83	0.35	0.63	0.98
Control Delay	16.1	0.3	53.4	26.7	41.9	42.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.1	0.3	53.4	26.7	41.9	42.2
Queue Length 50th (ft)	408	0	117	146	255	327
Queue Length 95th (ft)	m151	m0	#195	214	354	#598
Internal Link Dist (ft)	1155		596	714		
Turn Bay Length (ft)			177		110	
Base Capacity (vph)	873	876	270	831	659	893
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.27	0.83	0.33	0.57	0.94



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	622	190	196	245	335	738
Future Volume (vph)	622	190	196	245	335	738
Lane Group Flow (vph)	1900	1900	1900	1900	1900	1900
Ideal Flow (vph)	6.0	6.0	6.0	6.0	6.0	6.0
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	0.95	0.85	1.00	1.00	1.00	0.85
Flt Protected	1770	1583	1770	1863	1863	1583
Satd. Flow (prot)	0.95	1.00	0.28	1.00	1.00	1.00
Flt Permitted	1770	1583	514	1863	1863	1583
Satd. Flow (perm)	0.87	0.80	0.88	0.90	0.89	0.88
Peak-hour factor, PHF	715	238	223	272	376	839
Adj. Flow (vph)	0	95	0	0	0	350
RTOR Reduction (vph)	715	143	223	272	376	489
Lane Group Flow (vph)	Prot	Perm	pm-pt	NA	NA	Perm
Turn Type	4	1	6	2	2	2
Protected Phases	4	4	6			
Permitted Phases	64.2	64.2	53.8	53.8	41.8	41.8
Actuated Green, G (s)	64.2	64.2	53.8	53.8	41.8	41.8
Effective Green, g (s)	0.49	0.49	0.41	0.41	0.32	0.32
Actuated g/C Ratio	6.0	6.0	6.0	6.0	6.0	6.0
Clearance Time (s)	3.0	3.0	3.0	5.0	5.0	5.0
Vehicle Extension (s)	874	781	270	770	599	508
Lane Grp Cap (vph)	c0.40	c0.04	0.15	0.20		
v/s Ratio Prot	0.82	0.18	0.83	0.35	0.63	0.96
v/c Ratio	27.9	18.3	36.9	26.2	37.5	43.3
Uniform Delay, d1	0.38	0.00	1.00	1.00	1.00	1.00
Progression Factor	3.7	0.2	18.3	0.6	2.9	30.8
Incremental Delay, d2	14.3	0.2	55.1	26.7	40.4	74.2
Delay (s)	B	A	E	C	D	E
Level of Service	10.8		39.5	63.7		
Approach Delay (s)	B		D	E		
Approach LOS						

Intersection Summary		
HCM 2000 Control Delay	40.3	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.88	
Actuated Cycle Length (s)	130.0	Sum of lost time (s)
Intersection Capacity Utilization	78.0%	ICU Level of Service
Analysis Period (min)	15	
c Critical Lane Group		

HCM Unsignalized Intersection Capacity Analysis 10: Site Driveway 5/Site Driveway 1 & Ridgewalk Pkwy

Build SAT
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔	↔	↔	↔↔	↔				↔	↔	↔
Traffic Volume (veh/h)	0	1159	185	0	1174	96	0	0	94	0	0	187
Future Volume (Veh/h)	0	1159	185	0	1174	96	0	0	94	0	0	187
Sign Control		Free		Free			Yield				Yield	
Grade		0%		0%			0%				0%	
Peak Hour Factor	0.92	0.93	0.92	0.92	0.88	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1246	201	0	1334	104	0	0	102	0	0	203
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None										
Median storage (veh)		635										
Upstream signal (ft)		0.79		0.73		563	0.83	0.83	0.73	0.83	0.83	0.79
pX platoon unblocked		1334		1246			1913	2580	623	1957	2580	667
VC conflicting volume												
VC1, stage 1 conf vol												
VC2, stage 2 conf vol												
VCu, unblocked vol	894			596			569	1369	0	622	1369	50
IC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
IC, 2 stage (s)												
IF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	87	100	100	75
cM capacity (veh/h)	597			712			252	121	791	270	121	797
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 1	SB 1			
Volume Total	623	623	201	667	667	104	102	203				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	0	0	201	0	0	104	102	203				
cSH	1700	1700	1700	1700	1700	1700	791	797				
Volume to Capacity	0.37	0.37	0.12	0.39	0.39	0.06	0.13	0.25				
Queue Length 95th (ft)	0	0	0	0	0	0	11	25				
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.2	11.1				
Lane LOS							B	B				
Approach Delay (s)	0.0			0.0			10.2	11.1				
Approach LOS							B	B				
Intersection Summary												
Average Delay							1.0					
Intersection Capacity Utilization							50.7%					
Analysis Period (min)							15					
									ICU Level of Service			A

1/19/2016 Baseline

Synchro 9 Report
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HCM Unsignalized Intersection Capacity Analysis 11: Ridgewalk Pkwy & Site Driveway 3

Build SAT
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR
Lane Configurations		↔↔	↔	↔	↔↔	↔	↔	↔
Traffic Volume (veh/h)	0	823	811	130			0	187
Future Volume (Veh/h)	0	823	811	130			0	187
Sign Control		Free		Free			Yield	
Grade		0%		0%			0%	
Peak Hour Factor	0.92	0.93	0.88	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	885	922	141	0	0	203	
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type		None						
Median storage (veh)								
Upstream signal (ft)		964		1235			0.87	
pX platoon unblocked							1364	461
VC conflicting volume	922							
VC1, stage 1 conf vol								
VC2, stage 2 conf vol								
VCu, unblocked vol	922						1128	461
IC, single (s)	4.1						6.8	6.9
IC, 2 stage (s)								
IF (s)	2.2						3.5	3.3
p0 queue free %	100						100	63
cM capacity (veh/h)	736						173	547
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1		
Volume Total	442	442	461	461	141	203		
Volume Left	0	0	0	0	0	0		
Volume Right	0	0	0	0	141	203		
cSH	1700	1700	1700	1700	1700	547		
Volume to Capacity	0.26	0.26	0.27	0.27	0.08	0.37		
Queue Length 95th (ft)	0	0	0	0	0	43		
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	15.4		
Lane LOS						C		
Approach Delay (s)	0.0			0.0		15.4		
Approach LOS						C		
Intersection Summary								
Average Delay				1.5				
Intersection Capacity Utilization				40.7%				
Analysis Period (min)				15				
						ICU Level of Service		A

1/19/2016 Baseline

Synchro 9 Report
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HCM Unsignalized Intersection Capacity Analysis 12: Ridge Tr & Site Driveway 4

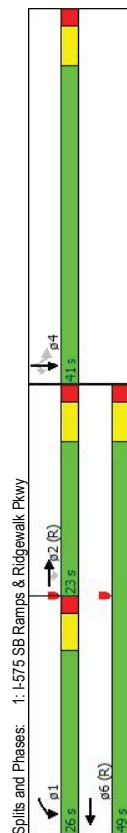
Build SAT
1/20/2016

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			4	P	
Traffic Volume (veh/h)	220	16	16	171	197	159
Future Volume (veh/h)	220	16	16	171	197	159
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	239	17	17	186	214	173
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					362	
pX platoon unblocked	0.88	0.88	0.88			
VC conflicting volume	520	300	387			
VC1 stage 1 conf vol						
VC2 stage 2 conf vol						
VCu unblocked vol	386	135	234			
IC single (s)	6.4	6.2	4.1			
IC 2 stage (s)						
IF (s)	3.5	3.3	2.2			
p0 queue free %	55	98	99			
CM capacity (veh/h)	535	803	1172			
Direction Lane #	EB 1	NB 1	SB 1			
Volume Total	256	203	387			
Volume Left	239	17	0			
Volume Right	17	0	173			
cSH	547	1172	1700			
Volume to Capacity	0.47	0.01	0.23			
Queue Length 95th (ft)	62	1	0			
Control Delay (s)	17.2	0.8	0.0			
Lane LOS	C	A				
Approach Delay (s)	17.2	0.8	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			5.4			
Intersection Capacity Utilization			42.1%			A
Analysis Period (min)			15			

Future “Build” Intersections Analysis With Improvements

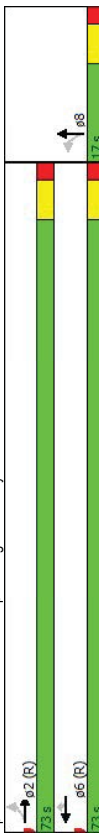
Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Configurations	➡	➡	➡	➡	➡	➡
EB Traffic Volume (vph)	190	152	546	105	3	26
EB Future Volume (vph)	190	152	546	105	3	26
Lane Group Flow (vph)	264	203	650	146	575	43
Lane Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Detector Phase	2	2	1	6	4	4
Switch Phase						
Minimum Initial (s)	15.0	15.0	5.0	15.0	6.0	6.0
Minimum Split (s)	21.3	21.3	11.0	22.0	13.0	13.0
Total Split (s)	23.0	23.0	26.0	49.0	41.0	41.0
Total Split (%)	25.6%	25.6%	28.9%	54.4%	45.6%	45.6%
Yellow Time (s)	4.3	4.3	4.0	4.3	4.3	4.3
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.0	6.3	6.3	6.3
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	None	C-Max	None	None
C/Ratio	0.66	0.41	0.87	0.16	0.90	0.07
Control Delay	42.8	9.1	36.6	9.0	46.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.8	9.1	36.6	9.0	46.5	0.2
Queue Length 50th (ft)	144	7	110	23	291	0
Queue Length 95th (ft)	175	36	#179	31	130	0
Internal Link Dist (ft)	563			559	412	
Turn Bay Length (ft)		100	250			
Base Capacity (vph)	403	491	766	933	684	679
Starvation Cap Reductn	0	0	0	0	0	0
Spillover Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.41	0.85	0.16	0.84	0.06
Intersection Summary						

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 37 (41%) Referenced to phase 2 EB and 6 WB T. Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 # 99th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

[illegible]

Queues 2: I-575 NB Ramps & Ridgeway Pkwy Build AM Improved 1/20/2016

	EBL	EBT	WBT	WBR	NBT	NBR	
Lane Group	EBL	EBT	WBT	WBR	NBT	NBR	
Lane Configurations	47	621	603	254	0	503	
Traffic Volume (vph)	47	621	603	254	0	503	
Future Volume (vph)	47	621	603	254	0	503	
Ideal Flow (vphpl)	65	661	735	310	57	572	
Turn Type	Perm	NA	NA	Perm	NA	Free	
Protected Phases	2	2	6	6	8	8	
Permitted Phases	2	2	6	6	8	8	
Detector Phase	2	2	6	6	8	8	
Switch Phase	2	2	6	6	8	8	
Minimum Initial (s)	15.0	15.0	6.0	6.0	5.7	5.7	
Minimum Split (s)	22.0	22.0	22.0	22.0	12.0	12.0	
Total Split (%)	73.0	73.0	73.0	73.0	17.0	17.0	
Total Split (%)	81.1%	81.1%	81.1%	81.1%	18.9%	18.9%	
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3	4.3	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	
v/c Ratio	0.12	0.44	0.26	0.23	0.35	0.36	
Control Delay	0.3	0.7	2.0	0.6	43.8	0.6	
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	
Total Delay	0.3	1.0	2.0	0.6	43.8	0.6	
Queue Length 50th (ft)	0	0	42	0	31	0	
Queue Length 95th (ft)	m0	m0	40	4	67	0	
Internal Link Dist (ft)	559	534			615		
Turn Bay Length (ft)	200		225				
Base Capacity (vph)	560	1507	2863	1340	210	1583	
Starvation Cap Reductn	0	315	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.12	0.55	0.26	0.23	0.27	0.36	
Intersection Summary							
Cycle Length: 90							
Actuated Cycle Length: 90							
Offset: 52 (58%), Referenced to phase 2:EBTL and 6:WBT. Start of Green							
Natural Cycle: 40							
Control Type: Actuated-Coordinated							
m Volume for 95th percentile queue is metered by upstream signal.							



HCM Signalized Intersection Capacity Analysis 2: I-575 NB Ramps & Ridgeway Pkwy Build AM Improved 1/20/2016

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	47	621	0	0	603	254	45	0	503	0	0	0
Traffic Volume (vph)	47	621	0	0	603	254	45	0	503	0	0	0
Future Volume (vph)	47	621	0	0	603	254	45	0	503	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3			6.3	6.3			6.3	4.0		
Lane Util. Factor	1.00	1.00			0.95	1.00			1.00	1.00		
Flt Protected	0.95	1.00			1.00	1.00			0.95	1.00		
Satd. Flow (prot)	1770	1863			3539	1583			1770	1583		
Flt Permitted	0.37	1.00			1.00	1.00			0.95	1.00		
Satd. Flow (perm)	694	1863			3539	1583			1770	1583		
Peak-hour factor, PHF	0.72	0.94	0.92	0.92	0.82	0.82	0.79	0.92	0.88	0.92	0.92	0.92
Adj. Flow (vph)	65	661	0	0	735	310	57	0	572	0	0	0
RTOR Reduction (vph)	0	0	0	0	68	0	0	0	0	0	0	0
Lane Group Flow (vph)	65	661	0	0	735	242	0	57	572	0	0	0
Turn Type	Perm	NA			NA	Perm	Perm	NA	Free			
Protected Phases	2				6			8				
Permitted Phases	2				6			8				
Actuated Green, G (s)	70.3	70.3			70.3	70.3		71	90.0			
Effective Green, g (s)	70.3	70.3			70.3	70.3		71	90.0			
Actuated g/C Ratio	0.78	0.78			0.78	0.78		0.08	1.00			
Clearance Time (s)	6.3	6.3			6.3	6.3		6.3	6.3			
Vehicle Extension (s)	5.0	5.0			5.0	5.0		3.0	3.0			
Lane Grp Cap (vph)	542	1455			2764	1236		139	1583			
v/s Ratio Prot	0.09	0.35			0.21			0.03	0.36			
v/c Ratio	0.12	0.45			0.27	0.20		0.41	0.36			
Uniform Delay, d1	2.4	3.3			2.7	2.5		39.5	0.0			
Progression Factor	0.02	0.04			0.61	0.54		1.00	1.00			
Incremental Delay, d2	0.3	0.6			0.2	0.3		2.0	0.6			
Delay (s)	0.3	0.8			1.9	1.7		41.4	0.6			
Level of Service	A	A			A	A		D	A			
Approach Delay (s)	0.7				1.8			4.3				0.0
Approach LOS	A				A			A				A
Intersection Summary												
HCM 2000 Control Delay												
HCM 2000 Volume to Capacity ratio												
Actuated Cycle Length (s)												
Intersection Capacity Utilization												
Analysis Period (min)												
c Critical Lane Group												

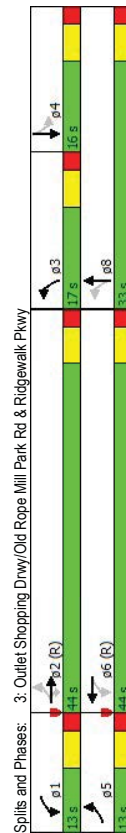
Queues

3: Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

Build AM Improved
1/20/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	←	←	←	←	←	←	←	←	←
Traffic Volume (vph)	76	827	223	70	661	116	6	32	11
Future Volume (vph)	76	827	223	70	661	116	6	32	11
Ideal Flow (vphpl)	106	889	251	86	853	136	93	44	97
Turn Type	pm-pt	NA	Perm	pm-pt	NA	pm-pt	NA	Perm	NA
Protected Phases	5	2	2	1	6	3	8	4	4
Permitted Phases	2	2	2	1	6	3	8	4	4
Detector Phase	5	2	2	1	6	3	8	4	4
Switch Phase	5	2	2	1	6	3	8	4	4
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	5.0	6.0	6.0	6.0
Minimum Split (s)	11.0	22.0	22.0	11.0	22.0	11.0	12.0	12.0	12.0
Total Split (%)	13.0	44.0	44.0	13.0	44.0	17.0	33.0	16.0	16.0
Total Split (%)	14.4%	48.9%	48.9%	14.4%	48.9%	18.9%	36.7%	17.8%	17.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	None	C-Max	C-Max	None	C-Max	None	None	None	None
Recall Mode	None	0.28	0.49	0.27	0.24	0.48	0.47	0.21	0.37
v/c Ratio	0.28	0.49	0.27	0.24	0.48	0.47	0.21	0.37	0.44
Control Delay	7.3	11.9	11.6	8.6	14.1	31.7	9.4	46.9	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.3	11.9	11.6	8.6	14.1	31.7	9.4	46.9	20.3
Queue Length 50th (ft)	13	140	8	17	126	60	8	24	12
Queue Length 95th (ft)	22	193	19	29	150	98	0	44	13
Internal Link Dist (ft)	534				686		232		281
Turn Bay Length (ft)	275	410	268					201	
Base Capacity (vph)	378	1799	928	363	1775	305	544	144	249
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.49	0.27	0.24	0.48	0.45	0.17	0.31	0.39

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 76 (84%), Referenced to phase 2EBTL and 6:WBT, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	



HCM Signalized Intersection Capacity Analysis

3: Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

Build AM Improved
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBT
Lane Configurations	←	←	←	←	←	←	←	←	←	←
Traffic Volume (vph)	76	827	223	70	661	46	116	6	32	11
Future Volume (vph)	76	827	223	70	661	46	116	6	32	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.88	1.00	1.00	0.88
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.88
Satd. Flow (prot)	1770	3539	1583	1770	3487	1770	1640	1770	1647	1647
Flt Permitted	0.26	1.00	1.00	0.24	1.00	0.37	1.00	0.70	1.00	0.88
Satd. Flow (perm)	481	3539	1583	455	3487	696	1640	1298	1647	1647
Peak-hour factor, PHF	0.72	0.93	0.89	0.81	0.86	0.55	0.85	0.31	0.85	0.72
Adj. Flow (vph)	106	889	251	86	769	84	136	19	74	44
RTOR Reduction (vph)	0	0	130	0	8	0	55	0	0	69
Lane Group Flow (vph)	106	889	121	86	845	0	136	38	0	44
Turn Type	pm-pt	NA	Perm	pm-pt	NA	pm-pt	NA	Perm	NA	NA
Protected Phases	5	2	2	1	6	3	8	4	4	4
Permitted Phases	2	2	2	1	6	3	8	4	4	4
Actuated Green, G (s)	49.2	43.4	43.4	49.0	43.3	22.9	22.9	7.0	7.0	7.0
Effective Green, g (s)	49.2	43.4	43.4	49.0	43.3	22.9	22.9	7.0	7.0	7.0
Actuated g/C Ratio	0.55	0.48	0.48	0.54	0.48	0.25	0.25	0.08	0.08	0.08
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	346	1706	763	331	1677	295	417	100	128	128
v/s Ratio Prot	c0.02	c0.25	0.08	0.02	0.24	c0.05	0.02	0.03	0.02	0.02
v/s Ratio Perm	0.15	0.31	0.52	0.16	0.26	0.50	0.46	0.09	0.44	0.22
v/c Ratio	0.31	0.52	0.16	0.26	0.50	0.46	0.09	0.44	0.22	0.22
Uniform Delay, d1	10.5	16.1	13.1	10.5	16.0	27.3	25.6	39.6	38.9	38.9
Progression Factor	0.64	0.64	0.39	0.81	0.78	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	1.1	0.4	0.4	1.1	1.1	1.1	3.1	0.9	0.9
Delay (s)	7.2	11.3	5.6	8.9	13.6	28.5	25.7	42.7	39.8	39.8
Level of Service	A	B	A	A	B	C	C	D	D	D
Approach Delay (s)	9.8			13.1		27.3		40.7		
Approach LOS	A			B		C		D		

c Critical Lane Group

Intersection Summary	
HCM 2000 Control Delay	14.3
HCM 2000 Volume to Capacity ratio	0.51
Actuated Cycle Length (s)	90.0
Intersection Capacity Utilization	55.1%
Analysis Period (min)	15

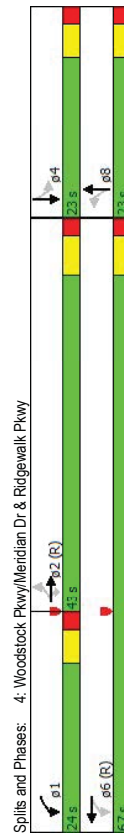
B Sum of lost time (s)
B ICU Level of Service

Queues
4: Woodstock Pkwy/Meridian Dr & Ridgeway Pkwy

Build AM Improved
1/20/2016

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	1	731	204	250	675	86	2	2	6
Traffic Volume (vph)	1	731	204	250	675	86	2	2	6
Future Volume (vph)	1	731	204	250	675	86	2	2	6
Ideal Flow (vphpl)	4	786	219	275	746	115	219	0	28
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	6	6	8	8	4	4
Permitted Phases	2	2	2	1	6	8	8	4	4
Detector Phase	2	2	2	1	6	8	8	4	4
Switch Phase	2	2	2	1	6	8	8	4	4
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	6.4	6.4	6.0	6.0
Minimum Split (s)	22.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Total Split (%)	43.0	43.0	43.0	24.0	67.0	23.0	23.0	23.0	23.0
Total Split (%)	47.8%	47.8%	47.8%	26.7%	74.4%	25.6%	25.6%	25.6%	25.6%
Yellow Time (s)	4.3	4.3	4.3	3.6	4.3	3.6	3.6	3.6	3.6
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.01	0.40	0.23	0.52	0.29	0.60	0.54	0.12	0.12
Control Delay	3.0	3.3	0.6	4.4	1.7	48.3	10.3	21.8	21.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Length	3.0	3.3	0.6	4.4	1.7	48.3	10.3	21.8	21.8
Queue Length 50th (ft)	0	21	0	6	10	62	2	7	7
Queue Length 95th (ft)	0	32	0	m12	m18	90	0	18	18
Internal Link Dist (ft)	686	110	90	555	531	187	144	144	144
Turn Bay Length (ft)	377	1948	958	639	2572	266	480	316	316
Base Capacity (vph)	0	0	0	0	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.40	0.23	0.43	0.29	0.43	0.46	0.09	0.09

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 5 (6%), Referenced to phase 2EBTL and 6:WBT, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
m Volume for 95th percentile queue is metered by upstream signal.	



HCM Signalized Intersection Capacity Analysis
4: Woodstock Pkwy/Meridian Dr & Ridgeway Pkwy

Build AM Improved
1/20/2016

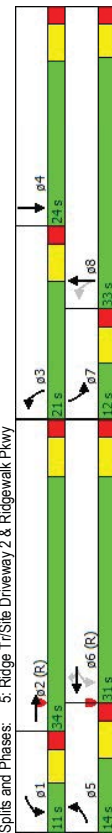
	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	1	731	204	250	675	86	2	2	6
Traffic Volume (vph)	1	731	204	250	675	86	2	2	6
Future Volume (vph)	1	731	204	250	675	86	2	2	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	0.99
Satd. Flow (prot)	1770	3539	1583	1770	3536	1770	1588	1725	1725
Flt Permitted	0.37	1.00	1.00	0.28	1.00	0.74	1.00	0.91	0.91
Satd. Flow (perm)	686	3539	1583	524	3536	1377	1588	1581	1581
Peak-hour factor, PHF	0.25	0.93	0.93	0.91	0.91	0.25	0.75	0.50	0.62
Adj. Flow (vph)	4	786	219	275	742	4	115	4	10
RTOR Reduction (vph)	0	0	87	0	0	0	185	0	12
Lane Group Flow (vph)	4	786	132	275	746	0	115	34	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	6	6	8	8	4	4
Permitted Phases	2	2	2	1	6	8	8	4	4
Actuated Green, G (s)	49.6	49.6	49.6	65.5	65.5	12.6	12.6	12.6	12.6
Effective Green, g (s)	49.6	49.6	49.6	65.5	65.5	12.6	12.6	12.6	12.6
Actuated g/C Ratio	0.55	0.55	0.55	0.73	0.73	0.14	0.14	0.14	0.14
Clearance Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Vehicle Extension (s)	5.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	378	1950	872	523	2573	192	222	221	221
v/s Ratio Prot	0.22	0.08	0.08	c0.06	0.21	c0.08	0.02	0.01	0.01
v/s Ratio Perm	0.01	0.40	0.15	0.53	0.29	0.60	0.15	0.07	0.07
Uniform Delay, d1	9.1	11.7	9.9	5.2	4.2	36.3	34.0	33.6	33.6
Progression Factor	0.23	0.21	0.02	0.28	0.31	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.6	0.3	0.8	0.2	5.0	0.3	0.1	0.1
Delay (s)	2.2	3.1	0.5	2.3	1.5	41.3	34.3	33.8	33.8
Level of Service	A	A	A	A	A	D	C	C	C
Approach Delay (s)	2.5	2.5	1.7	1.7	1.7	36.7	36.7	33.8	33.8
Approach LOS	A	A	A	A	A	D	D	C	C

Intersection Summary	
HCM 2000 Control Delay	7.3
HCM 2000 Volume to Capacity ratio	0.56
Actuated Cycle Length (s)	90.0
Intersection Capacity Utilization	60.1%
Analysis Period (min)	15
c Critical Lane Group	

Queues
5: Ridge Tr/Site Driveway 2 & Ridgewalk Pkwy

Build AM Improved
1/20/2016

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	185	524	58	554	36	221	4	94
Traffic Volume (vph)	185	524	58	554	36	221	4	94
Future Volume (vph)	185	524	58	554	36	221	4	94
Ideal Flow (vphpl)	201	726	85	630	39	340	99	102
Lane Group Flow (vph)	Prot	NA	pm-pt	NA	Perm	pm-pt	NA	Prot
Protected Phases	5	2	1	6	6	3	8	7
Permitted Phases	5	2	1	6	6	3	8	7
Detector Phase	5	2	1	6	6	3	8	7
Switch Phase	5	2	1	6	6	3	8	7
Minimum Initial (s)	5.0	15.0	5.0	15.0	5.0	5.0	6.0	5.0
Minimum Split (s)	11.0	22.0	11.0	22.0	11.0	12.0	11.0	24.0
Total Split (%)	14.0	34.0	11.0	31.0	31.0	33.0	12.0	24.0
Total Split (%)	15.6%	37.8%	12.2%	34.4%	23.3%	36.7%	13.3%	26.7%
Yellow Time (s)	4.0	4.3	3.6	4.3	4.3	4.0	3.6	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time (s)	6.0	6.3	5.6	6.3	6.3	6.0	5.6	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	None	C-Max	None	C-Max	None	None	None	None
Recall Mode	0.49	0.44	0.20	0.44	0.05	0.93	0.29	0.45
v/c Ratio	36.8	13.0	13.5	24.9	0.1	63.9	10.2	21.2
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	36.8	13.0	13.5	24.9	0.1	63.9	10.2	21.2
Total Delay	38	166	24	137	0	170	2	29
Queue Length 50th (ft)	58	229	m44	209	m0	166	44	55
Queue Length 95th (ft)	483	884				282		215
Internal Link Dist (ft)	145	150						
Turn Bay Length (ft)	408	1648	419	1445	794	365	551	228
Base Capacity (vph)	0	0	0	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.44	0.20	0.44	0.05	0.93	0.18	0.45
Intersection Summary								
Cycle Length: 90								
Actuated Cycle Length: 90								
Offset: 52 (58%), Referenced to phase 2 EBT and 6 WBT. Start of Green								
Natural Cycle: 70								
Control Type: Actuated-Coordinated								
m Volume for 95th percentile queue is metered by upstream signal.								



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HCM Signalized Intersection Capacity Analysis
5: Ridge Tr/Site Driveway 2 & Ridgewalk Pkwy

Build AM Improved
1/20/2016

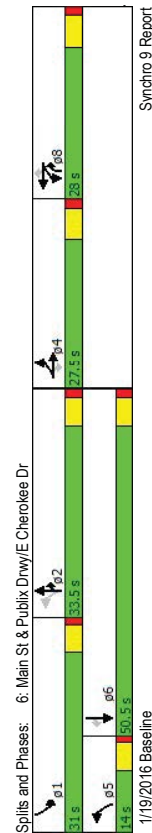
	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Movement	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	185	524	101	58	554	36	221	4
Traffic Volume (vph)	185	524	101	58	554	36	221	4
Future Volume (vph)	185	524	101	58	554	36	221	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.3	5.6	6.3	6.3	6.0	5.6	6.0
Lane Util. Factor	0.97	0.95	1.00	0.95	1.00	0.95	1.00	0.97
Fit	1.00	0.98	1.00	1.00	0.85	1.00	0.86	1.00
Fit Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3433	3454	1770	3539	1583	1770	1595	3433
Fit Permitted	0.95	1.00	0.35	1.00	0.37	1.00	0.95	1.00
Satd. Flow (perm)	3433	3454	652	3539	1583	684	1595	3433
Peak-hour factor, PHF	0.92	0.86	0.86	0.88	0.92	0.85	0.92	0.82
Adj. Flow (vph)	201	609	117	85	630	340	4	95
RTOR Reduction (vph)	0	14	0	0	24	0	79	0
Lane Group Flow (vph)	201	712	0	85	630	15	340	20
Turn Type	Prot	NA	pm-pt	NA	Perm	pm-pt	NA	Prot
Protected Phases	5	2	1	6	6	3	8	7
Permitted Phases	5	2	1	6	6	3	8	7
Actuated Green, G (s)	10.7	40.2	41.9	35.5	35.5	25.9	15.1	4.8
Effective Green, g (s)	10.7	40.2	41.9	35.5	35.5	25.9	15.1	4.8
Actuated g/C Ratio	0.12	0.45	0.47	0.39	0.39	0.29	0.17	0.05
Clearance Time (s)	6.0	6.3	5.6	6.3	6.3	6.0	5.6	6.0
Vehicle Extension (s)	3.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0
Lane Grp Cap (vph)	408	1542	383	1395	624	377	267	183
v/s Ratio Prot	c0.06	c0.21	0.02	0.18	c0.11	c0.15	0.01	0.03
v/s Ratio Perm	0.49	0.46	0.22	0.45	0.02	0.90	0.07	0.56
v/c Ratio	37.1	17.4	13.5	20.1	16.7	28.6	31.6	41.6
Uniform Delay, d1	0.89	0.71	1.34	1.16	1.00	1.00	1.00	1.00
Progression Factor	0.9	0.9	0.2	0.9	0.1	23.9	0.1	3.6
Incremental Delay, d2	34.1	13.2	18.4	24.2	16.7	52.5	31.7	45.2
Delay (s)	C	B	B	C	B	D	C	D
Level of Service	17.7	23.2	23.2	47.8	D	43.4	D	D
Approach Delay (s)								
Approach LOS								
Intersection Summary								
HCM 2000 Control Delay								
HCM 2000 Volume to Capacity ratio								
Actuated Cycle Length (s)								
Intersection Capacity Utilization								
Analysis Period (min)								
c Critical Lane Group								

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Queues
6: Main St & Publix Drwy/E Cherokee Dr

Build AM Improved
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Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	4	4	8	8	8	8	2	2	8	6
Traffic Volume (vph)	116	19	553	22	303	18	134	345	512	580
Future Volume (vph)	116	19	553	22	303	18	134	345	512	580
Ideal Flow (vphpl)	171	36	322	325	356	36	203	411	632	744
Turn Type	NA	Perm	Split	Split	NA	pm-pt	NA	pt-ov	Prot	NA
Protected Phases	4	4	8	8	8	2	2	2	8	6
Permitted Phases	4	4	8	8	8	2	2	2	8	6
Detector Phase	4	4	8	8	8	5	2	2	8	6
Switch Phase	4	4	8	8	8	5	2	2	8	6
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	15.0	8.0	15.0	15.0
Minimum Split (s)	27.5	27.5	27.5	27.5	27.5	14.0	26.0	14.0	32.0	32.0
Minimum Split (%)	27.5	27.5	28.0	28.0	28.0	14.0	33.5	31.0	50.5	50.5
Total Split (%)	22.9%	22.9%	23.3%	23.3%	23.3%	11.7%	27.9%	25.8%	42.1%	42.1%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.0	1.5	1.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.0	5.5	5.5
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Lead	Lag	Lead	Lag	Lag
Recall Mode	None	None	None	None	None	None	Min	None	Min	Min
v/c Ratio	0.66	0.10	0.93	0.93	0.93	0.18	0.48	0.52	0.86	0.95
Control Delay	57.0	0.5	78.3	78.1	8.7	19.7	41.7	8.9	53.9	54.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.0	0.5	78.3	78.1	8.7	19.7	41.7	8.9	53.9	54.4
Queue Length 50th (ft)	120	0	248	250	0	12	127	57	225	-540
Queue Length 95th (ft)	147	0	#474	217	61	17	148	88	273	#675
Internal Link Dist (ft)	33		935			546			494	
Turn Bay Length (ft)			650			300			330	120
Base Capacity (vph)	374	452	346	349	608	213	488	843	836	785
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.08	0.93	0.93	0.59	0.17	0.42	0.49	0.76	0.95
Intersection Summary										
Cycle Length: 120										
Actuated Cycle Length: 107.8										
Natural Cycle: 125										
Control Type: Actuated-Uncoordinated										
~ Volume exceeds capacity, queue is theoretically infinite.										
Queue shown is maximum after two cycles.										
# 95th percentile volume exceeds capacity, queue may be longer.										
Queue shown is maximum after two cycles.										



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HCM Signalized Intersection Capacity Analysis
6: Main St & Publix Drwy/E Cherokee Dr

Build AM Improved
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	3	116	19	553	22	303	18	134	345	512	580
Traffic Volume (vph)	3	116	19	553	22	303	18	134	345	512	580
Future Volume (vph)	3	116	19	553	22	303	18	134	345	512	580
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.0	5.5	5.5
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	0.85
Flt Protected	1.00	1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1858	1583	1681	1695	1583	1770	1863	1583	3433	1863	1583
Flt Permitted	1.00	1.00	1.00	0.95	0.96	1.00	0.15	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1858	1583	1681	1695	1583	279	1863	1583	3433	1863	1583
Peak-hour factor, PHF	0.38	0.71	0.53	0.91	0.56	0.85	0.50	0.66	0.84	0.81	0.78
Adj. Flow (vph)	8	163	36	608	39	356	36	203	411	632	744
RTOR Reduction (vph)	0	0	31	0	0	284	0	0	100	0	0
Lane Group Flow (vph)	0	171	5	322	325	72	36	203	311	632	744
Turn Type	Split	NA	Perm	Split	NA	Perm	pm-pt	NA	pt-ov	Prot	NA
Protected Phases	4	4	4	8	8	8	2	2	2	8	6
Permitted Phases	4	4	4	8	8	8	2	2	2	8	6
Actuated Green, G (s)	15.2	15.2	22.2	22.2	22.2	31.2	26.7	48.9	23.2	45.4	45.4
Effective Green, g (s)	15.2	15.2	22.2	22.2	22.2	31.2	26.7	48.9	23.2	45.4	45.4
Actuated g/C Ratio	0.14	0.14	0.20	0.20	0.20	0.28	0.24	0.45	0.21	0.41	0.41
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.0	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	257	219	339	342	320	140	453	704	725	770	654
v/s Ratio Prot	c0.09		0.19	c0.19		0.01	0.11	0.20	c0.18	c0.40	
v/s Ratio Perm		0.07	0.02	0.95	0.95	0.22	0.26	0.45	0.44	0.87	0.97
v/s Ratio		44.9	40.9	43.3	43.3	36.6	30.8	35.3	21.0	41.9	31.5
Uniform Delay, d1	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Progression Factor	6.4	0.0	35.4	35.7	0.4	1.0	1.5	0.9	11.2	24.6	0.0
Incremental Delay, d2	51.2	40.9	78.6	78.9	37.0	31.8	36.8	22.0	53.1	56.0	19.0
Delay (s)	D	D	D	E	E	D	C	D	C	D	E
Level of Service	49.5		63.9			27.1			54.3		D
Approach Delay (s)	D	D	D	E	E	C	C	C	D	D	D
Approach LOS	D	D	D	E	E	C	C	C	D	D	D
Intersection Summary											
HCM 2000 Control Delay											
HCM 2000 Volume to Capacity ratio											
Actuated Cycle Length (s)											
Intersection Capacity Utilization											
Analysis Period (min)											
c Critical Lane Group											

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HCM Unsignalized Intersection Capacity Analysis 7: Main St & Rope Mill Rd/E Main St

HCM Unsignalized Intersection Capacity Analysis 8: Woodstock Pkwy & Outlet Shopping Drwy/Rope Mill Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	13	2	149	1	0	3	116	228	2	8	555	28
Traffic Volume (veh/h)	13	2	149	1	0	3	116	228	2	8	555	28
Future Volume (veh/h)	13	2	149	1	0	3	116	228	2	8	555	28
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Grade	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.38	0.25	0.69	0.25	0.92	0.92	0.42	0.90	0.50	0.33	0.88	0.57
Hourly flow rate (vph)	34	8	216	4	0	3	276	253	4	24	631	49
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage (veh)												
Upstream signal (ft)												
pX platoon unblocked												
VC, conflicting volume	1514	1512	656	1730	1535	255	680					257
VC1, stage 1 conf vol												
VC2, stage 2 conf vol												
VCu, unblocked vol	1514	1512	656	1730	1535	255	680					257
IC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1					4.1
IC, 2 stage (s)												
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2					2.2
p0 queue free %	54	90	54	85	100	100	70					98
CM capacity (veh/h)	74	82	466	26	80	784	912					1308
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	258	7	533	704								
Volume Left	34	4	276	24								
Volume Right	216	3	4	49								
cSH	253	45	912	1308								
Volume to Capacity	102	0.16	0.30	0.02								
Queue Length 95th (ft)	254	13	32	1								
Control Delay (s)	105.0	100.4	7.3	0.5								
Lane LOS	F	F	A	A								
Approach Delay (s)	105.0	100.4	7.3	0.5								
Approach LOS	F	F										
Intersection Summary												
Average Delay												
Intersection Capacity Utilization												
Analysis Period (min)												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	26	40	43	70	40	71	66	135	50	73	244	30
Future Volume (veh/h)	26	40	43	70	40	71	66	135	50	73	244	30
Peak Hour Factor	0.67	0.75	0.81	0.66	0.60	0.75	0.62	0.82	0.75	0.79	0.73	0.75
Hourly flow rate (vph)	39	53	53	106	67	95	106	165	67	92	334	40
Approach Volume (veh/h)	145											466
Crossing Volume (veh/h)	532											279
High Capacity (veh/h)	910											1113
High v/c (veh/h)	0.16											0.42
Low Capacity (veh/h)	734											915
Low v/c (veh/h)	0.20											0.51
Intersection Summary												
Maximum v/c High												
Maximum v/c Low												
Intersection Capacity Utilization												
ICU Level of Service												

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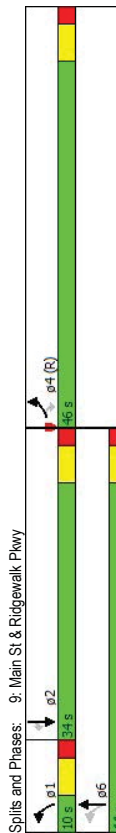
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	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	4	4	6	2	2	2
Traffic Volume (vph)	484	206	85	168	352	500
Future Volume (vph)	484	206	85	168	352	500
Lane Group Flow (vph)	569	240	92	213	374	588
Turn Type	Prot	Perm	pm-pt	NA	NA	Perm
Protected Phases	4	1	6	2	2	2
Permitted Phases	4	4	6	2	2	2
Detector Phase	4	4	1	6	2	2
Switch Phase	4	4	1	6	2	2
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	10.0	22.0	22.0	22.0
Minimum Split (%)	48.0	46.0	10.0	44.0	34.0	34.0
Total Split (%)	51.1%	51.1%	11.1%	48.9%	37.8%	37.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	None	None	None	None
v/c Ratio	0.61	0.25	0.47	0.33	0.79	0.77
Control Delay	12.0	1.5	26.3	21.8	43.7	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.0	1.5	26.3	21.8	43.7	12.6
Queue Length 50th (ft)	85	0	34	84	195	42
Queue Length 95th (ft)	130	0	61	109	279	119
Internal Link Dist (ft)	1155		596	714		
Turn Bay Length (ft)	177				110	
Base Capacity (vph)	928	944	194	786	579	832
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.25	0.47	0.27	0.65	0.71
Intersection Summary						
Cycle Length: 90						
Actuated Cycle Length: 90						
Offset: 73 (81%), Referenced to phase 4 EBL Start of Green						
Natural Cycle: 60						
Control Type: Actuated-Coordinated						



	EBL	EBR	NBL	NBT	SBT	SBR
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	4	4	6	2	2	2
Traffic Volume (vph)	484	206	85	168	352	500
Future Volume (vph)	484	206	85	168	352	500
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.21	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	390	1863	1863	1583
Peak-hour factor, PHF	0.85	0.86	0.92	0.79	0.94	0.85
Adj. Flow (vph)	569	240	92	213	374	588
RTOR Reduction (vph)	0	117	0	0	0	368
Lane Group Flow (vph)	569	123	92	213	374	220
Turn Type	Prot	Perm	pm-pt	NA	NA	Perm
Protected Phases	4	1	6	2	2	2
Permitted Phases	4	4	6	2	2	2
Actuated Green, G (s)	46.0	46.0	32.0	32.0	22.8	22.8
Effective Green, g (s)	46.0	46.0	32.0	32.0	22.8	22.8
Actuated g/C Ratio	0.51	0.51	0.36	0.36	0.25	0.25
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	5.0	5.0	5.0
Lane Grp Cap (vph)	904	809	187	662	471	401
v/s Ratio Prot	c0.32	0.02	0.16	c0.11	c0.20	0.14
v/c Ratio Perm	0.63	0.15	0.49	0.32	0.79	0.55
Uniform Delay, d1	15.9	11.7	21.6	21.1	31.4	29.1
Progression Factor	0.51	0.42	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	0.4	2.0	0.6	10.2	2.7
Delay (s)	11.2	5.2	23.6	21.7	41.6	31.8
Level of Service	B	A	C	C	D	C
Approach Delay (s)	9.4		22.3	35.6		
Approach LOS	A		C	D		
Intersection Summary						
HCM 2000 Control Delay			23.5			C
HCM 2000 Volume to Capacity ratio			0.68			
Actuated Cycle Length (s)			90.0			18.0
Intersection Capacity Utilization			65.0%			C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis 10: Site Driveway 5/Site Driveway 1 & Ridgewalk Pkwy

HCM Unsignalized Intersection Capacity Analysis 11: Ridgewalk Pkwy & Site Driveway 3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	798	80	0	835	22	0	0	12	0	0	64
Future Volume (Veh/h)	0	798	80	0	835	22	0	0	12	0	0	64
Sign Control												
Grade												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	867	87	0	908	24	0	0	13	0	0	70
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage (veh)												
Upstream signal (ft)												
pX platoon unblocked	0.89			0.89			0.94	0.94	0.89	0.94	0.94	0.89
VC conflicting volume	908			867			1321	1775	434	1342	1775	454
VC1 stage 1 conf vol												
VC2 stage 2 conf vol												
VCu unblocked vol	650			614			714	1195	129	735	1195	140
IC single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
IC 2 stage (s)												
IF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	98	100	100	91
CM capacity (veh/h)	830			860			274	175	802	285	175	786
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 1	SB 1			
Volume Total	434	434	87	454	454	24	13	70				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	0	0	87	0	0	24	13	70				
cSH	1700	1700	1700	1700	1700	1700	802	786				
Volume to Capacity	0.26	0.26	0.05	0.27	0.27	0.01	0.02	0.09				
Queue Length 95th (ft)	0	0	0	0	0	0	1	7				
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.6	10.0				
Lane LOS							A	B				
Approach Delay (s)	0.0			0.0			9.6	10.0				
Approach LOS							A	B				
Intersection Summary												
Average Delay							0.4					
Intersection Capacity Utilization							33.7%					A
Analysis Period (min)							15					

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (veh/h)	0	698	583	33	0	64			
Future Volume (Veh/h)	0	698	583	33	0	64			
Sign Control									
Grade									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	759	634	36	0	70			
Pedestrians									
Lane Width (ft)									
Walking Speed (ft/s)									
Percent Blockage									
Right turn flare (veh)									
Median type									
Median storage (veh)									
Upstream signal (ft)									
pX platoon unblocked									
VC conflicting volume	634			964	1235		0.91		
VC1 stage 1 conf vol							1014		317
VC2 stage 2 conf vol									
VCu unblocked vol	634			964	1235		825		317
IC single (s)	4.1			4.1			6.8		6.9
IC 2 stage (s)									
IF (s)	2.2			2.2			3.5		3.3
p0 queue free %	100			100			100		90
CM capacity (veh/h)	945			945			284		679
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1	SB 1	
Volume Total	380	380	317	317	36	70			
Volume Left	0	0	0	0	0	0			
Volume Right	0	0	0	0	36	70			
cSH	1700	1700	1700	1700	1700	679			
Volume to Capacity	0.22	0.22	0.19	0.19	0.02	0.10			
Queue Length 95th (ft)	0	0	0	0	0	9			
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	10.9			
Lane LOS						B			
Approach Delay (s)	0.0			0.0		10.9			
Approach LOS						B			
Intersection Summary									
Average Delay					0.5				
Intersection Capacity Utilization					26.7%				A
Analysis Period (min)					15				

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HCM Unsignalized Intersection Capacity Analysis 12: Ridge Tr & Site Driveway 4

Build AM Improved
1/20/2016

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W	1	3	266	110	54
Traffic Volume (veh/h)	39	1	3	266	110	54
Future Volume (veh/h)	39	1	3	266	110	54
Sign Control	Stop	Free	Free	0%	0%	0%
Grade	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	42	1	3	289	120	59
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						362
Upstream signal (ft)						
pX platoon unblocked						
VC, conflicting volume	444	150	179			
VC1, stage 1 conf vol						
VC2, stage 2 conf vol						
VCu, unblocked vol	444	150	179			
IC, single (s)	6.4	6.2	4.1			
IC, 2 stage (s)						
IF (s)	3.5	3.3	2.2			
p0 queue free %	93	100	100			
cm capacity (veh/h)	570	887	1387			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	43	292	179			
Volume Left	42	3	0			
Volume Right	1	0	59			
cSH	575	1397	1700			
Volume to Capacity	0.07	0.00	0.11			
Queue Length 95th (ft)	6	0	0			
Control Delay (s)	11.8	0.1	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.8	0.1	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			26.4%			A
Analysis Period (min)			15			

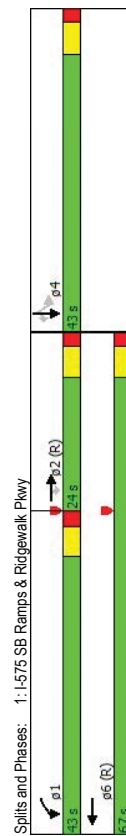
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Queues 1: I-575 SB Ramps & Ridgewalk Pkwy

Build PM Improved
1/20/2016

Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	134	70	919	276	2	41
Future Volume (vph)	134	70	919	276	2	41
Lane Group Flow (vph)	174	97	989	314	478	53
Turn Type	NA	Perm	Prot	NA	NA	Perm
Protected Phases	2	1	6	4		
Permitted Phases	2	2	1	6	4	4
Detector Phase	2	2	1	6	4	4
Switch Phase						
Minimum Initial (s)	15.0	15.0	5.0	15.0	6.0	6.0
Minimum Split (s)	21.3	21.3	11.0	22.0	13.0	13.0
Total Split (s)	24.0	24.0	43.0	67.0	43.0	43.0
Total Split (%)	21.8%	21.8%	39.1%	60.9%	39.1%	39.1%
Yellow Time (s)	4.3	4.3	4.0	4.3	4.3	4.3
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	6.3
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
v/c Ratio	0.46	0.24	0.89	0.29	0.89	0.10
Control Delay	45.4	9.9	38.2	11.1	56.5	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.4	9.9	38.2	11.1	56.5	1.7
Queue Length 50th (ft)	115	0	236	85	313	0
Queue Length 95th (ft)	157	25	405	141	198	1
Internal Link Dist (ft)	563			559	412	
Turn Bay Length (ft)	100	250				
Base Capacity (vph)	376	398	1163	1087	592	589
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.24	0.86	0.29	0.81	0.09
Intersection Summary						
Cycle Length: 110						
Actuated Cycle Length: 110						
Offset: 106 (96%), Referenced to phase 2:EBT and 6:WBT, Start of Green						
Natural Cycle: 90						
Control Type: Actuated-Coordinated						
# 95th percentile volume exceeds capacity, queue may be longer.						
Queue shown is maximum after two cycles.						



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HCM Signalized Intersection Capacity Analysis 1: I-575 SB Ramps & Ridgewalk Pkwy

Build PM Improved
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	134	70	919	276	0	0	0	0	403	2	41
Future Volume (vph)	0	134	70	919	276	0	0	0	0	403	2	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.0	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1863	1583	1583	3433	1863	1863	1775	1583	1775	1583	1775	1583
Flt Permitted	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1863	1583	1583	3433	1863	1863	1775	1583	1775	1583	1775	1583
Peak-hour factor, PHF	0.92	0.77	0.72	0.92	0.88	0.92	0.92	0.92	0.92	0.85	0.50	0.77
Adj. Flow (vph)	0	174	97	999	314	0	0	0	0	474	4	53
RTOR Reduction (vph)	0	0	77	0	0	0	0	0	0	0	0	37
Lane Group Flow (vph)	0	174	20	999	314	0	0	0	0	0	0	478
Turn Type	NA	Perm	Prot	NA	Prot	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	1	6	2	2	2	2	4	4	4
Permitted Phases	2	2	2	1	6	2	2	2	2	4	4	4
Actuated Green, G (s)	22.3	22.3	22.3	35.9	64.2	22.3	22.3	22.3	22.3	33.2	33.2	33.2
Effective Green, g (s)	22.3	22.3	22.3	35.9	64.2	22.3	22.3	22.3	22.3	33.2	33.2	33.2
Actuated g/C Ratio	0.20	0.20	0.20	0.33	0.58	0.20	0.20	0.20	0.20	0.30	0.30	0.30
Clearance Time (s)	6.3	6.3	6.3	6.0	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Vehicle Extension (s)	5.0	5.0	5.0	3.0	5.0	5.0	5.0	5.0	5.0	3.0	3.0	3.0
Lane Grp Cap (vph)	377	320	1120	1087						535	477	
v/s Ratio Prot	0.09	0.29	0.17									
v/s Ratio	0.46	0.06	0.89	0.29						0.27	0.01	
Uniform Delay, d1	38.6	35.4	35.2	11.5						36.7	27.1	
Progression Factor	1.00	1.00	0.78	0.85						1.00	1.00	
Incremental Delay, d2	4.0	0.4	8.7	0.6						17.1	0.0	
Delay (s)	42.6	35.8	36.3	10.3						53.8	27.1	
Level of Service	D	D	D	B						D	D	C
Approach Delay (s)	40.2			30.1						51.2		
Approach LOS	D			C						D		
Intersection Summary												
HCM 2000 Control Delay												
HCM 2000 Volume to Capacity ratio												
Actuated Cycle Length (s)												
Intersection Capacity Utilization												
Analysis Period (min)												
c Critical Lane Group												

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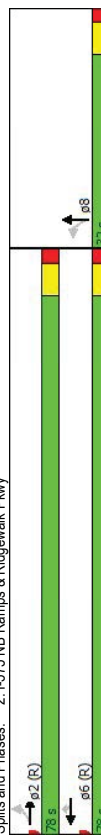
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Queues 2: I-575 NB Ramps & Ridgewalk Pkwy

Build PM Improved
1/20/2016

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations						
Traffic Volume (vph)	36	494	1057	612	0	755
Future Volume (vph)	36	494	1057	612	0	755
Lane Group Flow (vph)	56	549	1101	658	158	786
Turn Type	Perm	NA	NA	Perm	NA	Free
Protected Phases	2	2	6	6	8	Free
Permitted Phases	2	2	6	6	8	Free
Detector Phase	2	2	6	6	8	Free
Switch Phase	15.0	15.0	6.0	6.0	5.7	
Minimum Initial (s)	22.0	22.0	22.0	22.0	12.0	
Minimum Split (s)	78.0	78.0	78.0	78.0	32.0	
Total Split (%)	70.9%	70.9%	70.9%	70.9%	29.1%	
Total Split (s)	4.3	4.3	4.3	4.3	4.3	
Yellow Time (s)	2.0	2.0	2.0	2.0	2.0	
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	
Lost Time Adjust (s)	6.3	6.3	6.3	6.3	6.3	
Total Lost Time (s)	6.3	6.3	6.3	6.3	6.3	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	None
v/c Ratio	0.17	0.39	0.42	0.49	0.65	0.50
Control Delay	1.2	1.6	3.2	0.6	57.1	1.1
Queue Delay	0.0	0.5	0.2	0.3	0.0	0.0
Total Delay	1.2	2.1	3.4	0.8	57.1	1.1
Queue Length 50th (ft)	0	0	65	0	107	0
Queue Length 95th (ft)	m1	m18	m102	m0	167	0
Internal Link Dist (ft)	559	534			615	
Turn Bay Length (ft)	200		225			
Base Capacity (vph)	331	1393	2647	1350	413	1583
Starvation Cap Reductn	0	449	579	203	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.58	0.53	0.57	0.38	0.50
Intersection Summary						
Cycle Length: 110						
Actuated Cycle Length: 110						
Offset: 20 (18%), Referenced to phase 2:EBTL and 6:WBT, Start of Green						
Natural Cycle: 40						
Control Type: Actuated-Coordinated						
m Volume for 95th percentile queue is metered by upstream signal.						

Splits and Phases: 2: I-575 NB Ramps & Ridgewalk Pkwy



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HCM Signalized Intersection Capacity Analysis 2: I-575 NB Ramps & Ridgeway Pkwy

Build PM Improved
 1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	←	↑	→	←	↑	→	←	↑	→	←	↑	→
Traffic Volume (vph)	36	494	0	0	1057	612	131	0	755	0	0	0
Future Volume (vph)	36	494	0	0	1057	612	131	0	755	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1770	1863			3539	1583	1770	1583				
Flt Permitted	0.24	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	443	1863			3539	1583	1770	1583				
Peak-hour factor, PHF	0.64	0.90	0.92	0.92	0.96	0.93	0.83	0.92	0.96	0.92	0.92	0.92
Adj. Flow (vph)	56	549	0	0	1101	658	138	0	786	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	166	0	0	0	0	0	0
Lane Group Flow (vph)	56	549	0	0	1101	492	0	158	786	0	0	0
Turn Type	Perm	NA	NA	NA	Perm	Perm	Perm	NA	Free	NA	Free	NA
Protected Phases	2				6			8				
Permitted Phases	2				6			8				
Actuated Green, G (s)	82.3	82.3			82.3	82.3		15.1	110.0			
Effective Green, g (s)	82.3	82.3			82.3	82.3		15.1	110.0			
Actuated g/C Ratio	0.75	0.75			0.75	0.75		0.14	1.00			
Clearance Time (s)	6.3	6.3			6.3	6.3		6.3				
Vehicle Extension (s)	5.0	5.0			5.0	5.0		3.0				
Lane Grp Cap (vph)	331	1393			2647	1184		242	1583			
v/s Ratio Prot	0.29				0.31							
v/s Ratio Perm	0.13				0.31			0.09	c0.50			
v/c Ratio	0.17	0.39			0.42	0.42		0.65	0.50			
Uniform Delay, d1	4.0	4.9			5.1	5.1		48.0	0.0			
Progression Factor	0.08	0.18			0.54	0.16		1.00	1.00			
Incremental Delay, d2	0.8	0.6			0.2	0.4		6.2	1.1			
Delay (s)	1.1	1.5			2.9	1.3		51.2	1.1			
Level of Service	A	A			A	A		D	A			
Approach Delay (s)	1.4				2.3			9.5				0.0
Approach LOS	A				A			A				A
Intersection Summary												
HCM 2000 Control Delay					4.2			HCM 2000 Level of Service				A
HCM 2000 Volume to Capacity ratio					0.56							
Actuated Cycle Length (s)					110.0			Sum of lost time (s)				12.6
Intersection Capacity Utilization					76.6%			ICU Level of Service				D
Analysis Period (min)					15							
c Critical Lane Group												

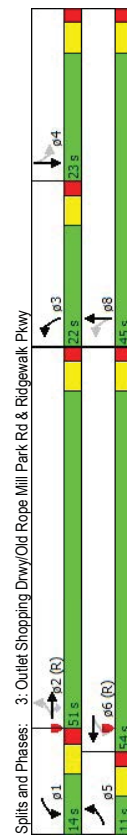
1/19/2016 Baseline

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Queues 3: Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgeway Pkwy

Build PM Improved
 1/20/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	71	965	256	91	1221	283	21	57	15
Future Volume (vph)	71	965	256	91	1221	283	21	57	15
Lane Group Flow (vph)	76	1016	291	121	1453	311	176	66	333
Turn Type	pm-pt	NA	Perm	pm-pt	NA	pm-pt	NA	Perm	NA
Protected Phases	5	2		1	6	3	8		4
Permitted Phases	2		2	6		8		4	
Detector Phase	5	2	2	1	6	3	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	5.0	6.0	6.0	6.0
Minimum Split (s)	11.0	22.0	22.0	11.0	22.0	11.0	12.0	12.0	12.0
Total Split (s)	11.0	51.0	51.0	14.0	54.0	22.0	45.0	23.0	23.0
Total Split (%)	10.0%	46.4%	46.4%	12.7%	49.1%	20.0%	40.9%	20.9%	20.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None
v/c Ratio	0.51	0.70	0.35	0.51	0.90	0.96	0.26	0.36	0.96
Control Delay	26.5	20.0	1.6	21.2	27.9	71.1	7.5	48.0	68.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	20.0	1.6	21.2	27.9	71.1	7.5	48.0	68.8
Queue Length 50th (ft)	15	214	6	25	515	170	15	42	154
Queue Length 95th (ft)	54	297	3	46	667	232	29	84	177
Internal Link Dist (ft)		534		686			232		281
Turn Bay Length (ft)	275		410	268				201	
Base Capacity (vph)	150	1461	824	243	1607	325	671	185	350
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.70	0.35	0.50	0.90	0.96	0.26	0.36	0.95
Intersection Summary									
Cycle Length: 110									
Actuated Cycle Length: 110									
Offset: 34 (31%); Referenced to phase 2:EBTL and 6:WBTL, Start of Green									
Natural Cycle: 90									
Control Type: Actuated-Coordinated									
# 95th percentile volume exceeds capacity, queue may be longer.									
Queue shown is maximum after two cycles.									



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HCM Signalized Intersection Capacity Analysis

3. Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

Build PM Improved

1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	71	965	256	91	1221	70	283	21	109	57	15	187
Traffic Volume (vph)	71	965	256	91	1221	70	283	21	109	57	15	187
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	6.0	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total Lost time (s)	1.00	1.00	0.85	1.00	0.99	1.00	0.88	1.00	0.86	1.00	0.86	1.00
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Flt Protected	1770	3539	1583	1770	3499	1770	1633	1770	1601	1770	1601	1770
Satd. Flow (prot)	0.09	1.00	1.00	0.14	1.00	0.18	1.00	0.65	1.00	0.65	1.00	1.00
Flt Permitted	164	3539	1583	259	3499	327	1633	1204	1601	1204	1601	1601
Peak-hour factor, PHF	0.94	0.95	0.88	0.75	0.91	0.63	0.91	0.68	0.75	0.87	0.70	0.80
Adj. Flow (vph)	76	1016	291	121	1342	111	311	31	145	66	21	312
RTOR Reduction (vph)	0	0	171	0	6	0	0	93	0	0	103	0
Lane Group Flow (vph)	76	1016	120	121	1447	0	311	83	0	66	230	0
Turn Type	pm-pt	NA	Perm	pm-pt	NA	pm-pt	NA	pm-pt	NA	Perm	NA	NA
Protected Phases	5	2	2	6	1	6	3	8	4	4	4	4
Permitted Phases	2	2	2	6	1	6	8	8	8	8	8	8
Actuated Green, G (s)	49.5	45.5	45.5	56.9	49.2	38.8	38.8	38.8	16.8	16.8	16.8	16.8
Effective Green, g (s)	49.5	45.5	45.5	56.9	49.2	38.8	38.8	38.8	16.8	16.8	16.8	16.8
Actuated g/C Ratio	0.45	0.41	0.41	0.52	0.45	0.35	0.35	0.35	0.15	0.15	0.15	0.15
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	132	1463	654	239	1565	325	576	183	244	183	244	244
v/s Ratio Prot	0.02	0.29	0.08	0.23	0.41	0.14	0.05	0.05	0.14	0.05	0.14	0.14
v/s Ratio Perm	0.24	0.69	0.18	0.51	0.92	0.36	0.14	0.36	0.94	0.36	0.94	0.94
Uniform Delay, d1	23.7	26.5	20.5	17.4	28.7	29.9	24.3	41.8	46.1	41.8	46.1	46.1
Progression Factor	1.12	0.64	0.19	1.14	0.69	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	2.5	0.6	1.4	9.4	38.1	0.1	1.2	41.5	1.2	41.5	41.5
Delay (s)	32.0	19.6	4.4	21.4	29.0	68.0	24.4	43.0	87.6	43.0	87.6	87.6
Level of Service	C	B	A	C	C	E	C	D	F	D	F	F
Approach Delay (s)	17.1	28.4	28.4	28.4	28.4	52.3	52.3	52.3	80.2	52.3	80.2	80.2
Approach LOS	B	B	B	B	B	D	D	D	F	D	F	F
Intersection Summary												
HCM 2000 Control Delay	32.7											
HCM 2000 Volume to Capacity ratio	0.97											
Actuated Cycle Length (s)	110.0											
Intersection Capacity Utilization	88.2%											
Analysis Period (min)	15											
c Critical Lane Group												

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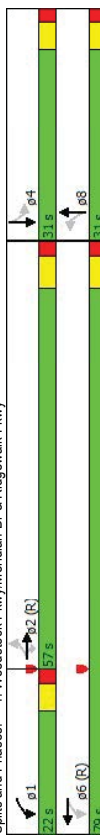
Queues

4. Woodstock Pkwy/Meridian Dr & Ridgewalk Pkwy

Build PM Improved

1/20/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔
Traffic Volume (vph)	11	1083	63	172	1255	118	8	1	2
Future Volume (vph)	11	1083	63	172	1255	118	8	1	2
Lane Group Flow (vph)	22	1128	84	212	1473	137	344	0	22
Turn Type	Perm	NA	Perm	pm-pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	6	1	6	8	8	4
Permitted Phases	2	2	2	6	1	6	8	4	4
Detector Phase	2	2	2	2	1	6	8	4	4
Switch Phase	15.0	15.0	15.0	5.0	15.0	6.4	6.4	6.0	6.0
Minimum Initial (s)	22.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Minimum Split (s)	57.0	57.0	57.0	22.0	79.0	31.0	31.0	31.0	31.0
Total Split (%)	51.8%	51.8%	51.8%	20.0%	71.8%	28.2%	28.2%	28.2%	28.2%
Yellow Time (s)	4.3	4.3	4.3	3.6	4.3	3.6	3.6	3.6	3.6
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Total Lag	Lag	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
Recall Mode	0.11	0.53	0.09	0.55	0.56	0.67	0.70	0.17	0.17
v/c Ratio	4.6	3.7	0.2	7.0	3.5	58.8	15.9	24.9	24.9
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.6	3.7	0.2	7.0	3.5	58.8	15.9	24.9	24.9
Queue Length 50th (ft)	2	50	0	8	31	93	30	5	5
Queue Length 95th (ft)	m3	75	m0	m10	m155	140	0	11	11
Internal Link Dist (ft)	686	110	90	187	555	531	144	144	144
Turn Bay Length (ft)	197	2111	977	461	2626	319	597	189	189
Base Capacity (vph)	0	0	0	0	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.53	0.09	0.46	0.56	0.43	0.58	0.12	0.12
Intersection Summary									
Cycle Length: 110									
Actuated Cycle Length: 110									
Offset: 44 (40%), Referenced to phase 2:EBTL and 6:WBT, Start of Green									
Natural Cycle: 60									
Control Type: Actuated-Coordinated									
m Volume for 95th percentile queue is metered by upstream signal.									
Solis and Phases: 4: Woodstock Pkwy/Meridian Dr. & Ridgewalk Pkwy									



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HCM Signalized Intersection Capacity Analysis 4: Woodstock Pkwy/Meridian Dr & Ridgeway Pkwy

Build PM Improved
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1	1
Traffic Volume (vph)	11	1083	63	172	1255	6	118	8	264	1	2	6
Future Volume (vph)	11	1083	63	172	1255	6	118	8	264	1	2	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt	1.00	1.00	0.85	1.00	1.00	1.00	1.00	0.86	1.00	0.91	0.99	0.99
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	1.00	0.99	0.99
Satd. Flow (prot)	1770	3539	1583	1770	3534	1770	1770	1598	1770	1598	1687	1687
Flt Permitted	0.18	1.00	1.00	0.18	1.00	0.18	0.74	1.00	0.74	1.00	0.45	0.45
Satd. Flow (perm)	332	3539	1583	330	3534	330	1384	1598	1384	1598	772	772
Peak-hour factor, PHF	0.50	0.96	0.75	0.81	0.86	0.42	0.86	0.44	0.81	0.25	0.50	0.42
Adj. Flow (vph)	22	1128	84	212	1459	14	137	18	326	4	4	14
RTOR Reduction (vph)	0	0	33	0	1	0	0	253	0	0	12	0
Lane Group Flow (vph)	22	1128	51	212	1472	0	137	91	0	0	10	0
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	2	2	2	6	6	1	6	8	8	4	4	4
Permitted Phases	2	2	2	6	6	1	6	8	8	4	4	4
Actuated Green, G (s)	65.6	65.6	65.6	81.7	81.7	16.4	16.4	16.4	16.4	16.4	16.4	16.4
Effective Green, g (s)	65.6	65.6	65.6	81.7	81.7	16.4	16.4	16.4	16.4	16.4	16.4	16.4
Actuated g/C Ratio	0.60	0.60	0.60	0.74	0.74	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Clearance Time (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Vehicle Extension (s)	5.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	197	2110	944	382	2624	206	238	238	238	115	115	115
v/s Ratio Prot	0.32	0.05	0.05	c0.42	c0.42	c0.10	c0.06	c0.06	c0.06	0.01	0.01	0.01
v/s Ratio Perm	0.11	0.53	0.05	0.55	0.56	0.67	0.38	0.38	0.38	0.09	0.09	0.09
Uniform Delay, d1	9.6	13.2	9.3	7.8	6.2	44.2	44.2	44.2	44.2	40.4	40.4	40.4
Progression Factor	0.27	0.20	0.02	0.70	0.42	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.8	0.1	1.2	0.6	7.8	7.8	7.8	7.8	1.0	0.3	0.3
Delay (s)	3.5	3.4	0.3	6.7	3.2	52.1	52.1	52.1	52.1	40.7	40.7	40.7
Level of Service	A	A	A	A	A	D	D	D	D	D	D	D
Approach Delay (s)	3.2	3.2	3.2	3.6	3.6	45.8	45.8	45.8	45.8	40.7	40.7	40.7
Approach LOS	A	A	A	A	A	D	D	D	D	D	D	D
Intersection Summary												
HCM 2000 Control Delay	9.6											
HCM 2000 Volume to Capacity ratio	0.61											
Actuated Cycle Length (s)	110.0											
Intersection Capacity Utilization	79.3%											
Analysis Period (min)	15											
c Critical Lane Group												

1/19/2016 Baseline

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Queues 5: Ridge Tr/Site Driveway 2 & Ridgeway Pkwy

Build PM Improved
1/20/2016

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	454	662	155	812	96	336	10	248	10
Future Volume (vph)	454	662	155	812	96	336	10	248	10
Lane Group Flow (vph)	493	937	176	944	104	405	83	270	216
Turn Type	Prot	NA	pm+pt	NA	Perm	pm+pt	NA	Prot	NA
Protected Phases	5	2	1	6	6	3	8	7	4
Permitted Phases	5	2	1	6	6	3	8	7	4
Detector Phase	5	2	1	6	6	3	8	7	4
Switch Phase	5	2	1	6	6	3	8	7	4
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	6.0	5.0	5.0
Minimum Split (s)	11.0	22.0	11.0	22.0	22.0	11.0	12.0	11.0	24.0
Total Split (s)	22.0	46.0	15.0	39.0	39.0	25.0	29.0	20.0	24.0
Total Split (%)	20.0%	41.8%	13.6%	35.5%	35.5%	22.7%	26.4%	18.2%	21.8%
Yellow Time (s)	4.0	4.3	3.6	4.3	4.3	4.0	3.6	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.3	5.6	6.3	6.3	6.0	5.6	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	None	C-Max	None	C-Max	C-Max	None	None	None	None
Recall Mode	0.73	0.62	0.53	0.80	0.16	1.09	0.32	0.51	0.70
v/c Ratio	40.8	19.0	15.2	29.9	0.4	109.2	15.6	48.1	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.8	19.0	15.2	29.9	0.4	109.2	15.6	48.1	20.2
Queue Length 50th (ft)	113	281	34	238	0	~275	7	94	8
Queue Length 95th (ft)	#241	398	m49	m314	m0	#334	49	139	78
Internal Link Dist (ft)	483	884	884	884	884	282	282	215	215
Turn Bay Length (ft)	145	150	150	100	160	160	401	539	432
Base Capacity (vph)	679	1518	336	1177	662	370	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.62	0.52	0.80	0.16	1.09	0.21	0.50	0.50
Intersection Summary									
Cycle Length: 110									
Actuated Cycle Length: 110									
Offset: 102 (93%), Referenced to phase 2:EBT and 6:WBT, Start of Green									
Natural Cycle: 90									
Control Type: Actuated-Coordinated									
~ Volume exceeds capacity, queue is theoretically infinite.									
Queue shown is maximum after two cycles.									
#	95th percentile volume exceeds capacity, queue may be longer.								
Queue shown is maximum after two cycles.									
Volume for 95th percentile queue is metered by upstream signal									

Splits and Phases: 5: Ridge Tr/Site Driveway 2 & Ridgeway Pkwy



HCM Signalized Intersection Capacity Analysis 5: Ridge Tr/Site Driveway 2 & Ridgewalk Pkwy

Build PM Improved
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4	4	4
Traffic Volume (vph)	454	662	176	155	812	96	336	10	63	248	10	189
Future Volume (vph)	454	662	176	155	812	96	336	10	63	248	10	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.3	5.6	6.3	6.3	6.3	6.0	5.6	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Flt	1.00	0.97	1.00	1.00	1.00	0.85	1.00	0.87	1.00	0.86	1.00	0.86
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3433	3420	1770	3539	1583	1770	1620	3433	1598	3433	1598	1598
Flt Permitted	0.95	1.00	0.25	1.00	1.00	0.34	1.00	0.34	1.00	0.95	1.00	0.95
Satd. Flow (perm)	3433	3420	474	3539	1583	626	1620	3433	1598	3433	1598	1598
Peak-hour factor, PHF	0.92	0.91	0.84	0.88	0.86	0.92	0.83	0.92	0.88	0.92	0.92	0.92
Adj. Flow (vph)	493	727	210	176	944	104	405	11	72	270	11	205
RTOR Reduction (vph)	0	22	0	0	0	71	0	64	0	0	187	0
Lane Group Flow (vph)	493	915	0	176	944	33	405	19	0	270	29	0
Turn Type	Prot	NA	NA	pm+pt	NA	pm+pt	NA	NA	Prot	NA	NA	NA
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases				6		6	8					
Actuated Green, G (s)	21.8	47.0	46.0	35.4	35.4	30.9	11.9	17.0	9.5	17.0	9.5	9.5
Effective Green, g (s)	21.8	47.0	46.0	35.4	35.4	30.9	11.9	17.0	9.5	17.0	9.5	9.5
Actuated g/C Ratio	0.20	0.43	0.42	0.32	0.32	0.28	0.11	0.15	0.09	0.15	0.09	0.09
Clearance Time (s)	6.0	6.3	5.6	6.3	6.3	6.0	5.6	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	5.0	3.0	5.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	680	1461	323	1138	509	373	175	530	138	530	138	138
v/s Ratio Prot	0.14	0.27	0.05	0.27	0.02	0.12	0.01	0.08	0.02	0.08	0.02	0.02
v/s Ratio Perm	0.72	0.63	0.54	0.83	0.07	1.09	0.11	0.51	0.21	0.51	0.21	0.21
Uniform Delay, d1	41.3	24.6	20.9	34.5	25.8	37.1	44.3	42.7	46.8	42.7	46.8	46.8
Progression Factor	0.83	0.72	0.91	0.76	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	1.8	1.0	3.8	0.1	71.6	0.3	0.8	0.8	0.8	0.8	0.8
Delay (s)	37.6	19.5	20.0	30.1	26.0	108.7	44.5	43.4	47.5	43.4	47.5	47.5
Level of Service	D	B	C	C	C	F	D	D	D	D	D	D
Approach Delay (s)	25.8		28.3				97.8		45.2			
Approach LOS	C		C				F		D			
Intersection Summary												
HCM 2000 Control Delay									D			
HCM 2000 Volume to Capacity ratio												
Actuated Cycle Length (s)									24.3			
Intersection Capacity Utilization									E			
Analysis Period (min)												
c Critical Lane Group												

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Queues 6: Main St & Publix Drwy/E Cherokee Dr

Build PM Improved
1/20/2016

Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4	4
Traffic Volume (vph)	81	75	455	78	423	108	481	675	327	288	18
Future Volume (vph)	81	75	455	78	423	108	481	675	327	288	18
Lane Group Flow (vph)	174	101	333	340	516	119	534	785	367	313	27
Turn Type	NA	Perm	Split	NA	Perm	pm+pt	NA	pt+ov	Prot	NA	Perm
Protected Phases	4		8		8	5	2	2	8	1	6
Permitted Phases											
Detector Phase	4	4	8	8	8	5	2	2	8	1	6
Switch Phase											
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	15.0	8.0	15.0	15.0	15.0
Minimum Split (s)	27.5	27.5	27.5	27.5	27.5	14.0	26.0	14.0	32.0	32.0	32.0
Total Split (s)	27.5	27.5	32.0	32.0	32.0	14.0	42.5	18.0	46.5	46.5	46.5
Total Split (%)	22.9%	22.9%	26.7%	26.7%	26.7%	11.7%	35.4%	15.0%	38.8%	38.8%	38.8%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.0	1.5	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.5	5.5	5.5	5.5
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	None	None	None	None	None
v/s Ratio	0.68	0.31	0.87	0.88	0.76	0.28	0.91	0.76	0.92	0.48	0.04
Control Delay	60.0	7.1	67.0	66.9	17.3	19.5	59.0	11.1	79.6	31.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.0	7.1	67.0	66.9	17.3	19.5	59.0	11.1	79.6	31.9	0.1
Queue Length 50th (ft)	124	0	251	256	62	47	373	94	140	177	0
Queue Length 95th (ft)	170	12	#383	267	144	89	#614	190	#245	279	0
Internal Link Dist (ft)	33		935		300	100	546		330	494	
Turn Bay Length (ft)			650		300	100	255		330	120	
Base Capacity (vph)	350	403	390	398	696	430	616	1058	398	684	662
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.25	0.85	0.85	0.75	0.28	0.87	0.74	0.92	0.46	0.04
Intersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 112.4											
Natural Cycle: 105											
Control Type: Actuated-Uncoordinated											
# 95th percentile volume exceeds capacity, queue may be longer.											
Queue shown is maximum after two cycles.											
Splits and Phases: 6: Main St & Publix Drwy/E Cherokee Dr											
	18 s	42.5 s	27.5 s	32 s	27.5 s	27.5 s	32 s	32 s	32 s	32 s	32 s
	18 s	42.5 s	27.5 s	32 s	27.5 s	27.5 s	32 s	32 s	32 s	32 s	32 s
	18 s	42.5 s	27.5 s	32 s	27.5 s	27.5 s	32 s	32 s	32 s	32 s	32 s

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HCM Signalized Intersection Capacity Analysis 6: Main St & Publix Drwy/E Cherokee Dr

1/20/2016

Build PM Improved

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	41	81	75	455	78	423	108	481	675	327	288	18
Traffic Volume (vph)	41	81	75	455	78	423	108	481	675	327	288	18
Future Volume (vph)	41	81	75	455	78	423	108	481	675	327	288	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Flt	1.00	0.85	1.00	0.95	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.98	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.85	1.00	0.95	1.00
Satd. Flow (prot)	1826	1583	1681	1714	1583	1770	1863	1583	1583	3433	1863	1583
Flt Permitted	0.98	1.00	0.95	0.97	1.00	0.48	1.00	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1826	1583	1681	1714	1583	901	1863	1583	3433	1863	1583	1583
Peak-hour factor, PHF	0.58	0.79	0.74	0.82	0.66	0.82	0.91	0.90	0.86	0.88	0.92	0.67
Adj. Flow (vph)	71	103	101	555	118	516	119	534	785	367	313	27
RTOR Reduction (vph)	0	0	87	0	0	321	0	0	170	0	0	17
Lane Group Flow (vph)	0	174	14	333	340	195	119	534	615	367	313	10
Turn Type	Split	NA	Perm	Split	NA	Perm	prn-pt	NA	pt-ov	Prot	NA	Perm
Protected Phases	4	4	4	8	8	8	5	2	28	1	6	6
Permitted Phases	4	4	4	8	8	8	2	2	28	1	6	6
Actuated Green, G (s)	15.9	15.9	25.5	25.5	25.5	25.5	44.1	35.4	60.9	13.1	39.8	39.8
Effective Green, g (s)	15.9	15.9	25.5	25.5	25.5	25.5	44.1	35.4	60.9	13.1	39.8	39.8
Actuated g/C Ratio	0.14	0.14	0.23	0.23	0.23	0.23	0.39	0.31	0.54	0.12	0.35	0.35
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.0	5.5	5.5	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	258	223	381	388	359	420	586	857	400	659	560	560
v/s Ratio Prot	c0.10	0.20	c0.20	0.12	0.09	0.12	0.09	c0.29	0.39	c0.11	c0.17	c0.17
v/c Ratio	0.67	0.06	0.87	0.88	0.54	0.28	0.91	0.72	0.92	0.47	0.02	0.02
Uniform Delay, d1	45.8	41.8	41.9	41.9	38.3	22.4	37.0	19.3	49.1	28.2	23.6	23.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.8	0.1	19.4	19.3	1.7	0.4	19.3	3.6	25.4	1.1	0.0	0.0
Delay (s)	52.6	41.9	61.3	61.2	40.0	22.8	56.3	22.9	74.5	29.3	23.6	23.6
Level of Service	D	D	E	E	D	C	C	E	C	E	C	C
Approach Delay (s)	48.7			52.0			35.3			52.6		
Approach LOS	D			D			D			D		
Intersection Summary												
HCM 2000 Control Delay				45.2			HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio				0.85								
Actuated Cycle Length (s)				112.4			Sum of lost time (s)			22.5		
Intersection Capacity Utilization				72.8%			ICU Level of Service			C		
Analysis Period (min)				15								
c Critical Lane Group												

1/19/2016 Baseline

Synchro 9 Report
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HCM Unsignalized Intersection Capacity Analysis 7: Main St & Rope Mill Rd/E Main St

1/20/2016

Build PM Improved

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	17	0	112	10	4	7	100	493	8	7	460	30
Traffic Volume (veh/h)	17	0	112	10	4	7	100	493	8	7	460	30
Future Volume (Veh/h)	17	0	112	10	4	7	100	493	8	7	460	30
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
Grade	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.62	0.25	0.87	0.75	0.50	0.92	0.95	0.96	0.88	0.33	0.85	0.75
Hourly flow rate (vph)	27	0	129	13	8	8	105	514	9	21	541	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage (veh)												
Upstream signal (ft)												
pK, platoon unblocked												
VC, conflicting volume	1344	1336	561	1460	1352	518	581					
VC1, stage 1 conf vol												
VC2, stage 2 conf vol												
VCU, unblocked vol	1344	1336	561	1460	1352	518	581					
IC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1					
IC, 2 stage (s)												
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2					
p0 queue free %	75	100	76	82	94	99	89					
dM capacity (veh/h)	110	134	527	73	132	557	993					
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	156	29	628	602								
Volume Left	27	13	105	21								
Volume Right	129	8	9	40								
cSH	318	115	993	1043								
Volume to Capacity	0.49	0.25	0.11	0.02								
Queue Length 95th (ft)	64	23	9	2								
Control Delay (s)	26.8	46.7	2.7	0.5								
Lane LOS	D	E	A	A								
Approach Delay (s)	26.8	46.7	2.7	0.5								
Approach LOS	D	E										
Intersection Summary												
Average Delay				5.3								
Intersection Capacity Utilization				76.4%								
Analysis Period (min)				15								
ICU Level of Service				D								

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Synchro 9 Report
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	20	35	85	22	39	80	45	237	21	61	100	11
Future Volume (veh/h)	20	35	85	22	39	80	45	237	21	61	100	11
Peak Hour Factor	0.57	0.91	0.83	0.50	0.89	0.88	0.71	0.73	0.71	0.73	0.70	0.45
Hourly flow rate (vph)	35	38	102	44	44	91	63	325	30	84	143	24
Approach Volume (veh/h)	175				179			418			251	
Crossing Volume (veh/h)	271				423			157			151	
High Capacity (veh/h)	1120				993			1225			1231	
High v/c (veh/h)	0.16				0.18			0.34			0.20	
Low Capacity (veh/h)	921				807			1016			1021	
Low v/c (veh/h)	0.19				0.22			0.41			0.25	
Intersection Summary												
Maximum v/c High												
Maximum v/c Low												
Intersection Capacity Utilization												
									A			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	728	230	248	407	297	763
Future Volume (vph)	728	230	248	407	297	763
Lane Group Flow (vph)	791	256	261	457	323	942
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Detector Phase	4	4	1	6	2	2
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	10.0	22.0	22.0	22.0
Total Split (s)	60.0	60.0	12.0	50.0	38.0	38.0
Total Split (%)	54.5%	54.5%	10.9%	45.5%	34.5%	34.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	None	None	None	None
v/c Ratio	0.87	0.28	0.98	0.65	0.65	0.99
Control Delay	30.7	6.8	80.8	32.8	41.8	35.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	6.8	80.8	32.8	41.8	35.7
Queue Length 50th (ft)	224	16	128	253	196	191
Queue Length 95th (ft)	#736	99	#278	356	291	#357
Internal Link Dist (ft)	1155			596	714	
Turn Bay Length (ft)			177			110
Base Capacity (vph)	910	925	267	745	541	976
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.28	0.98	0.61	0.60	0.97
Intersection Summary						

Cycle Length: 110

Actuated Cycle Length: 110

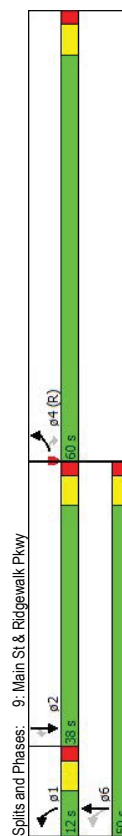
Offset: 104 (95%), Referenced to phase 4:EBL, Start of Green

Natural Cycle: 75

Natural Cycle: 73
Control Type: Actuated-Coordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.



HCM Signalized Intersection Capacity Analysis 9: Main St & Ridgewalk Pkwy

HCM Unsignalized Intersection Capacity Analysis 10: Site Driveway 5/Site Driveway 1 & Ridgewalk Pkwy

Build PM Improved
 1/20/2016

Build PM Improved
 1/20/2016

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	728	230	248	407	297	763
Future Volume (vph)	728	230	248	407	297	763
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	1.00	0.85	1.00	1.00	1.00	0.85
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Fit Permitted	0.95	1.00	0.28	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	528	1863	1863	1583
Peak-hour factor, PHF	0.92	0.90	0.95	0.89	0.92	0.81
Adj. Flow (vph)	791	256	261	457	323	942
RTOR Reduction (vph)	0	111	0	0	0	533
Lane Group Flow (vph)	791	145	261	457	323	409
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		1	6	2	
Permitted Phases		4	6			2
Actuated Green, G (s)	56.6	56.6	41.4	41.4	29.4	29.4
Effective Green, g (s)	56.6	56.6	41.4	41.4	29.4	29.4
Actuated g/C Ratio	0.51	0.51	0.38	0.38	0.27	0.27
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	5.0	5.0	5.0
Lane Grp Cap (vph)	910	814	266	701	497	423
v/s Ratio Prot	0.45		0.05	0.25	0.17	
v/s Ratio Perm		0.09	0.31			0.26
v/c Ratio	0.87	0.18	0.98	0.65	0.65	0.97
Uniform Delay, d1	23.4	14.3	35.0	28.3	35.7	39.8
Progression Factor	0.81	2.09	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.5	0.4	49.7	2.9	4.0	35.5
Delay (s)	28.5	30.2	84.7	31.3	39.7	75.3
Level of Service	C	C	F	C	D	E
Approach Delay (s)	28.9		50.7	66.3		
Approach LOS	C		D	E		
Intersection Summary						
HCM 2000 Control Delay	49.7			HCM 2000 Level of Service		
HCM 2000 Volume to Capacity ratio	0.95			D		
Actuated Cycle Length (s)	110.0			Sum of lost time (s)		
Intersection Capacity Utilization	84.7%			18.0		
Analysis Period (min)	15			ICU Level of Service		
Critical Lane Group				E		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔	↔		↕↕	↔			↔		↔	↔
Traffic Volume (veh/h)	0	1205	121	0	1266	65	0	0	89	0	0	152
Future Volume (Veh/h)	0	1205	121	0	1266	65	0	0	89	0	0	152
Sign Control	Free	Free	Free	Free	Free	Free	Yield	Yield	Yield	Yield	Yield	Yield
Grade	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.92	0.91	0.92	0.92	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1324	132	0	1472	71	0	0	97	0	0	165
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)		None			None							
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		635			563							
pX, platoon unblocked	0.76			0.82			0.85	0.85	0.82	0.85	0.85	0.76
v/c, conflicting volume	1472			1324			2060	2796	662	2134	2796	736
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	980			948			920	1788	138	1007	1788	8
IC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
IC, 2 stage (s)												
IF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	87	100	100	80
dM capacity (veh/h)	529			588			153	68	723	143	68	811
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	662	662	132	736	736	71	97	165				
Volume Left	0	0	0	0	0	0	0	0				
Volume Right	0	0	132	0	0	71	97	165				
CSH	1700	1700	1700	1700	1700	1700	723	811				
Volume to Capacity	0.39	0.39	0.08	0.43	0.43	0.04	0.13	0.20				
Queue Length 95th (ft)	0	0	0	0	0	0	12	19				
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.7	10.6				
Lane LOS							B	B				
Approach Delay (s)	0.0			0.0			10.7	10.6				
Approach LOS							B	B				
Intersection Summary												
Average Delay	0.9											
Intersection Capacity Utilization	51.1%											
Analysis Period (min)	15											
	A											

HCM Unsignalized Intersection Capacity Analysis 11: Ridgewalk Pkwy & Site Driveway 3

Build PM Improved
 1/20/2016

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↔	↔↔	↔	↔	↔
Traffic Volume (veh/h)	0	965	915	91	0	152
Future Volume (Veh/h)	0	965	915	91	0	152
Sign Control		Free	Free	Yield		
Grade		0%	0%	0%		
Peak Hour Factor	0.92	0.91	0.86	0.92	0.92	0.92
Hourly flow rate (vph)	0	1060	1064	99	0	165
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)		964	1235			
Upstream signal (ft)				0.83		
pX platoon unblocked				1594		
VC conflicting volume	1064					532
VC1 stage 1 conf vol						
VC2 stage 2 conf vol	1064					532
VCu unblocked vol	4.1					6.9
IC single (s)						
IC 2 stage (s)						
IF (s)	2.2			3.5		3.3
p0 queue free %	100			100		66
cM capacity (veh/h)	651			125		492
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	530	530	532	532	99	165
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	99	165
cSH	1700	1700	1700	1700	492	
Volume to Capacity	0.31	0.31	0.31	0.31	0.06	0.34
Queue Length 95th (ft)	0	0	0	0	0	37
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	16.0
Lane LOS					C	C
Approach Delay (s)	0.0		0.0			16.0
Approach LOS			C			C
Intersection Summary						
Average Delay	1.1					
Intersection Capacity Utilization	41.4%			ICU Level of Service		
Analysis Period (min)	15			A		

1/19/2016 Baseline

Synchro 9 Report
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HCM Unsignalized Intersection Capacity Analysis 12: Ridge Tr & Site Driveway 4

Build PM Improved
 1/20/2016

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	221	13	10	188	240	99
Future Volume (Veh/h)	221	13	10	188	240	99
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	240	14	11	204	261	108
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)				None	None	
Median type						
Median storage (veh)						
Upstream signal (ft)		0.94	0.94	0.94		362
pX platoon unblocked		541	315	369		
VC conflicting volume						
VC1 stage 1 conf vol						
VC2 stage 2 conf vol						
VCu unblocked vol	475	234	292			
IC single (s)	6.4	6.2	4.1			
IC 2 stage (s)						
IF (s)	3.5	3.3	2.2			
p0 queue free %	53	98	99			
cM capacity (veh/h)	508	754	1189			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	254	215	369			
Volume Left	240	11	0			
Volume Right	14	0	108			
cSH	517	1189	1700			
Volume to Capacity	0.49	0.01	0.22			
Queue Length 95th (ft)	67	1	0			
Control Delay (s)	18.5	0.5	0.0			
Lane LOS	C	A				
Approach Delay (s)	18.5	0.5	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay	5.7					
Intersection Capacity Utilization	38.4%			ICU Level of Service		
Analysis Period (min)	15			A		

1/19/2016 Baseline

Synchro 9 Report
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Lane Group	EBT	EBR	WBL	WBT	SBT	SEB	
Lane Configurations	↕	↗	↘	↕	↖	↗	↘
Left Traffic Volume (vph)	132	110	969	184	3	22	
Through Traffic Volume (vph)	132	110	969	184	3	22	
Right Traffic Volume (vph)	157	172	999	204	686	44	
Lane Group Flow (vph)	NA	Perm	Prot	NA	NA	Perm	
Turn Type	NA	Perm	Prot	NA	NA	Perm	
Protected Phases	2		1	6	4		
Permitted Phases		2				4	
Detector Phase	2	2	1	6	4	4	
Switch Phase							
Minimum Initial (s)	15.0	15.0	5.0	15.0	6.0	6.0	
Minimum Split (s)	21.3	21.3	11.0	22.0	13.0	13.0	
Total Split (s)	22.0	22.0	39.0	61.0	49.0	49.0	
Initial Split (%)	20.0%	20.0%	35.5%	55.5%	44.5%	44.5%	
Yellow Time (s)	4.3	4.3	4.0	4.3	4.3	4.3	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.3	6.3	6.0	6.3	6.3	6.3	
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	None	C-Max	None	None	
Ratio	0.59	0.46	0.97	0.22	1.00	0.07	
Control Delay	54.2	10.8	51.6	16.2	67.7	0.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	54.2	10.8	51.6	16.2	67.7	0.3	
Queue Length 50th (ft)	105	0	313	64	476	0	
Queue Length 95th (ft)	162	11	#489	101	188	0	
Internal Link Dist (ft)	563			559	412		
Turn Bay Length (ft)		100	250				
Base Capacity (vph)	265	373	1029	926	689	670	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillover Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.59	0.46	0.97	0.22	1.00	0.07	
Intersection Summary							

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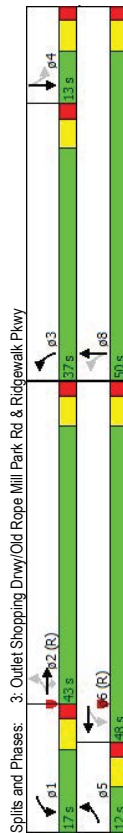
Queues

3: Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

HCM Signalized Intersection Capacity Analysis

3: Outlet Shopping Drwy/Old Rope Mill Park Rd & Ridgewalk Pkwy

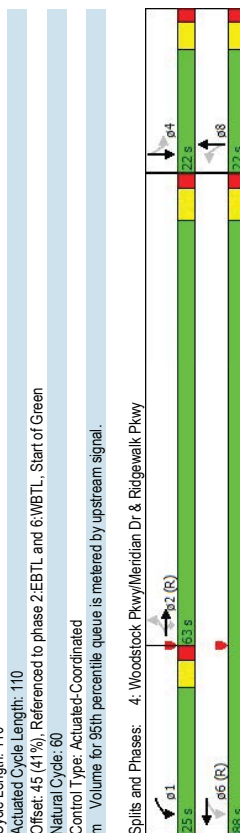
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	98	935	775	171	919	523	36	49	17
Traffic Volume (vph)	98	935	775	171	919	523	36	49	17
Future Volume (vph)	98	935	775	171	919	523	36	49	17
Ideal Flow (vphpl)	114	1214	807	244	1087	608	266	67	186
Turn Type	pm-pt	NA	Perm	pm-pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	2	2	6	3	8	4	4
Permitted Phases	2	2	2	2	1	6	3	8	4
Detector Phase	5	2	2	2	1	6	3	8	4
Switch Phase	5	2	2	2	1	6	3	8	4
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	22.0	22.0	11.0	22.0	12.0	12.0	12.0	12.0
Total Split (s)	12.0	43.0	43.0	17.0	48.0	37.0	50.0	13.0	13.0
Total Split (%)	10.9%	39.1%	39.1%	15.5%	43.6%	33.6%	45.5%	11.8%	11.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	None	C-Max	C-Max	None	C-Max	None	None	None	None
Recall Mode	0.67	1.02	0.76	1.00	0.81	1.07	0.35	0.96	0.79
v/c Ratio	34.2	62.5	6.8	95.8	27.2	89.5	10.5	149.2	39.8
Queue Delay	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.2	62.5	7.0	95.8	27.2	89.5	10.5	149.2	39.8
Queue Length 50th (ft)	41	~433	20	137	207	~428	48	48	32
Queue Length 95th (ft)	m62	416	78	#180	250	#599	59	#103	#71
Internal Link Dist (ft)	534			686			232		281
Turn Bay Length (ft)	275	410	268				566	750	201
Base Capacity (vph)	169	1190	1068	244	1343	566	750	70	234
Starvation Cap Reductn	0	0	23	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	1.02	0.77	1.00	0.81	1.07	0.35	0.96	0.79



Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	98	935	775	171	919	55	523	36	197
Traffic Volume (vph)	98	935	775	171	919	55	523	36	197
Future Volume (vph)	98	935	775	171	919	55	523	36	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.99	1.00	0.88	1.00	0.87
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3507	1770	1638	1770	1618
Flt Permitted	0.12	1.00	1.00	0.10	1.00	0.31	1.00	0.60	1.00
Satd. Flow (perm)	216	3539	1583	177	3507	573	1638	1109	1618
Peak-hour factor, PHF	0.86	0.77	0.96	0.70	0.90	0.83	0.86	0.92	0.73
Adj. Flow (vph)	114	1214	807	244	1021	66	608	52	214
RTOR Reduction (vph)	0	0	536	0	4	0	0	95	0
Lane Group Flow (vph)	114	1214	271	244	1083	0	608	171	0
Turn Type	pm-pt	NA	Perm	pm-pt	NA	pm-pt	NA	Perm	NA
Protected Phases	5	2	2	1	6	3	8	4	4
Permitted Phases	2	2	2	6	8	3	8	4	4
Actuated Green, G (s)	43.0	37.0	37.0	53.0	42.0	44.0	44.0	44.0	7.0
Effective Green, g (s)	43.0	37.0	37.0	53.0	42.0	44.0	44.0	44.0	7.0
Actuated g/C Ratio	0.39	0.34	0.34	0.48	0.38	0.40	0.40	0.06	0.06
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	169	1190	532	244	1339	566	655	70	102
v/s Ratio Prot	0.04	0.34	0.17	c0.10	c0.31	c0.30	0.10	0.03	0.03
v/s Ratio Perm	0.67	1.02	0.51	1.00	0.81	1.07	0.26	0.06	0.54
v/c Ratio	24.3	36.5	29.2	31.6	30.4	29.6	22.1	51.4	49.9
Uniform Delay, d1	1.01	0.94	1.32	1.57	0.73	1.00	1.00	1.00	1.00
Progression Factor	7.8	27.9	2.6	55.2	4.9	59.3	0.2	91.8	5.4
Incremental Delay, d2	32.4	62.1	41.3	104.6	27.0	89.0	22.3	143.1	55.3
Delay (s)	C	E	D	F	C	F	C	F	E
Level of Service	C	E	D	F	C	F	C	F	E
Approach Delay (s)	52.6			41.2		68.7		78.6	
Approach LOS	D			D		E		E	

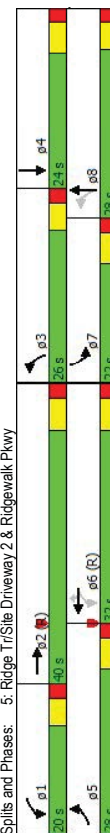
Intersection Summary		
HCM 2000 Control Delay	53.8	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	1.11	
Actuated Cycle Length (s)	110.0	Sum of lost time (s)
Intersection Capacity Utilization	94.1%	ICU Level of Service
Analysis Period (min)	15	
c Critical Lane Group		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Left Lane Configurations	Left Through-Right	Left Through-Right	Left Through-Right	Left Through-Right	Left Through-Right	Left Through-Right	Left Through-Right	Left Through-Right	Left Through-Right
Left Lane Traffic Volume (vph)	12	1130	55	231	1142	53	2	7	2
Left Lane Volume (vph)	12	1130	55	231	1142	53	2	7	2
Left Lane Flow (vph)	17	1329	75	254	1259	62	223	0	22
Left Lane Type	Perm	NA	Perm	pm-pt	NA	Perm	NA	Perm	NA
Protected Phases	2	2	1	6	6	8	8	4	4
Permitted Phases	2	2	2	2	1	6	8	4	4
Detector Phase	2	2	2	1	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	150	150	150	50	150	64	64	60	60
Minimum Split (s)	220	220	220	110	220	120	120	120	120
Minimum Split (%)	63.0	63.0	63.0	25.0	88.0	22.0	22.0	22.0	22.0
Total Split (s)	57.3%	57.3%	57.3%	22.7%	80.0%	20.0%	20.0%	20.0%	20.0%
Total Split (%)	57.3%	57.3%	57.3%	22.7%	80.0%	20.0%	20.0%	20.0%	20.0%
Yellow Time (s)	4.3	4.3	4.3	3.6	4.3	3.6	3.6	3.6	3.6
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Cost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cost Time Lost (s)	6.3	6.3	6.3	5.6	6.3	5.6	5.6	5.6	5.6
Lead/Lag	Lag	Lag	Lag	Lead	Lead				
Head-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	None	None	None	None
Recall Ratio	0.07	0.60	0.07	0.66	0.45	0.47	0.64	0.38	0.38
Control Delay	2.5	3.2	0.1	25.9	1.0	58.0	16.2	50.6	50.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.5	3.2	0.1	25.9	1.0	58.0	16.2	50.6	50.6
Queue Length 50th (ft)	1	49	0	44	22	42	5	9	9
Queue Length 95th (ft)	m2	m51	m0	m73	m28	79	0	16	16
Internal Link Dist (ft)	686				555	531		144	
Turn Bay Length (ft)	110	110	90			187			
Base Capacity (vph)	258	2217	1022	470	2819	206	420	85	85
Stallion Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.60	0.07	0.54	0.45	0.30	0.53	0.26	0.26

[illegible]

Queues
5: Ridge Tr/Site Driveway 2 & Ridgewalk Pkwy
Build SAT Improved
1/20/2016

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Traffic Volume (vph)	603	477	167	698	136	334	13	294
Future Volume (vph)	603	477	167	698	136	334	13	294
Ideal Flow (vphpl)	655	757	283	793	148	423	78	263
Turn Type	Prot	NA	pm-pt	NA	Perm	pm-pt	NA	Prot
Protected Phases	5	2	1	6	3	8	7	4
Permitted Phases	5	2	1	6	3	8	7	4
Detector Phase	5	2	1	6	3	8	7	4
Switch Phase	5	2	1	6	3	8	7	4
Minimum Initial (s)	5.0	15.0	5.0	15.0	6.0	6.0	5.0	5.0
Minimum Split (s)	11.0	22.0	11.0	22.0	12.0	12.0	11.0	24.0
Total Split (%)	28.0	40.0	20.0	32.0	26.0	28.0	22.0	24.0
Total Split (%)	25.5%	36.4%	18.2%	29.1%	23.6%	25.5%	20.0%	21.8%
Yellow Time (s)	4.0	4.3	3.6	4.3	3.6	3.6	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.3	5.6	6.3	5.6	5.6	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	None	C-Max	None	C-Max	None	None	None	None
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
v/c Ratio	0.80	0.57	0.66	0.80	0.25	1.07	0.31	0.55
Control Delay	29.8	23.1	23.6	36.6	1.5	100.1	17.1	47.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.8	23.1	23.6	36.6	1.5	100.1	17.1	47.4
Queue Length 50th (ft)	144	254	63	229	0	~283	9	111
Queue Length 95th (ft)	#319	322	77	m#351	m2	#300	50	158
Internal Link Dist (ft)	483	884	884	884	282	282	215	215
Turn Bay Length (ft)	145	150	150	100	160	160	596	470
Base Capacity (vph)	817	1335	441	988	589	395	393	596
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.57	0.64	0.80	0.25	1.07	0.20	0.54
Intersection Summary								
Cycle Length: 110								
Actuated Cycle Length: 110								
Offset: 5 (6%), Referenced to phase 2 EBT and 6 WBT L. Start of Green								
Natural Cycle: 90								
Control Type: Actuated-Coordinated								
~ Volume exceeds capacity, queue is theoretically infinite.								
# 95th percentile volume exceeds capacity, queue may be longer.								
Queue shown is maximum after two cycles.								
Queue shown is maximum after two cycles.								
m Volume for 95th percentile queue is metered by upstream signal.								



HCM Signalized Intersection Capacity Analysis
5: Ridge Tr/Site Driveway 2 & Ridgewalk Pkwy
Build SAT Improved
1/20/2016

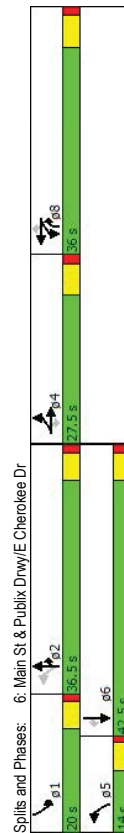
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	603	477	176	167	698	136	334	13	44	294	12	230
Future Volume (vph)	603	477	176	167	698	136	334	13	44	294	12	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.3	5.6	6.3	5.6	6.3	5.6	5.6	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	1.00	0.95	1.00	0.95	1.00	0.88	1.00	0.97	1.00	0.86
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3433	3368	1770	3539	1583	1770	1633	3433	1597	3433	1597	3433
Flt Permitted	0.95	1.00	0.34	1.00	0.34	1.00	0.34	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3433	3368	635	3539	1583	635	1633	3433	1597	3433	1597	3433
Peak-hour factor, PHF	0.92	0.93	0.72	0.59	0.88	0.92	0.79	0.92	0.69	0.92	0.92	0.92
Adj. Flow (vph)	655	513	244	283	793	148	423	14	64	320	13	250
RTOR Reduction (vph)	0	47	0	0	0	108	0	57	0	0	228	0
Lane Group Flow (vph)	655	710	0	283	793	40	423	21	0	320	36	0
Turn Type	Prot	NA	pm-pt	NA	pm-pt	NA	pm-pt	NA	Prot	NA	NA	NA
Protected Phases	5	2	1	6	3	8	7	4	7	4	4	4
Permitted Phases	5	2	1	6	3	8	7	4	7	4	4	4
Actuated Green, G (s)	26.2	41.0	44.8	29.6	29.6	32.2	11.8	18.5	9.9	18.5	9.9	9.9
Effective Green, g (s)	26.2	41.0	44.8	29.6	29.6	32.2	11.8	18.5	9.9	18.5	9.9	9.9
Actuated g/C Ratio	0.24	0.37	0.41	0.27	0.27	0.29	0.11	0.17	0.09	0.17	0.09	0.09
Clearance Time (s)	6.0	6.3	5.6	6.3	5.6	6.3	5.6	5.6	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	5.0	3.0	5.0	3.0	5.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	817	1255	415	952	425	395	175	577	143	577	143	143
v/s Ratio Prot	c0.19	0.21	0.09	c0.22	0.18	c0.20	0.01	0.09	0.02	0.09	0.02	0.02
v/s Ratio Perm	0.80	0.57	0.68	0.83	0.09	1.07	0.12	0.55	0.25	0.55	0.25	0.25
Uniform Delay, d1	39.5	27.4	23.0	37.9	30.1	36.4	44.4	42.0	46.6	42.0	46.6	46.6
Progression Factor	0.95	0.85	1.19	0.81	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	1.6	3.3	6.1	0.3	65.5	0.3	1.2	0.9	1.2	0.9	0.9
Delay (s)	26.6	25.0	30.6	36.6	15.3	101.8	44.7	43.1	47.5	43.1	47.5	47.5
Level of Service	C	C	C	D	B	F	D	D	D	D	D	D
Approach Delay (s)	25.7	25.7	32.7	32.7	92.9	92.9	45.1	45.1	45.1	45.1	45.1	45.1
Approach LOS	C	C	C	C	F	F	D	D	D	D	D	D
Intersection Summary												
HCM 2000 Control Delay	40.1											
HCM 2000 Volume to Capacity ratio	0.93											
Actuated Cycle Length (s)	110.0											
Intersection Capacity Utilization	89.8%											
Analysis Period (min)	15											
c Critical Lane Group												

Queues
6: Main St & Publix Drwy/E Cherokee Dr

Build SAT Improved
1/20/2016

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT	SBR
Lane Configurations	4	4	8	8	8	8	2	2	6
Traffic Volume (vph)	59	59	517	62	269	76	307	422	315
Future Volume (vph)	59	59	517	62	269	76	307	422	315
Ideal Flow (vphpl)	142	94	326	329	292	84	357	449	354
Turn Type	NA	Perm	Split	NA	Perm	pm-pt	NA	pt-ov	Prot
Protected Phases	4	4	8	8	8	2	2	2	8
Permitted Phases	4	4	8	8	8	2	2	2	8
Detector Phase	4	4	8	8	8	5	2	2	8
Switch Phase	4	4	8	8	8	5	2	2	8
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	15.0	8.0	15.0
Minimum Split (s)	27.5	27.5	27.5	27.5	14.0	26.0	14.0	32.0	32.0
Total Split (s)	27.5	27.5	36.0	36.0	36.0	14.0	36.5	20.0	42.5
Total Split (%)	22.9%	22.9%	30.0%	30.0%	11.7%	30.4%	16.7%	35.4%	35.4%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.0	1.5	1.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	5.0	5.5	5.5	5.5	5.5
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					None	None	None	None	Min
Recall Mode	None	None	None	None	None	None	None	None	Min
v/c Ratio	0.58	0.26	0.76	0.76	0.47	0.23	0.80	0.44	0.73
Control Delay	53.4	1.8	49.3	48.7	6.8	20.9	52.2	2.1	53.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Length	53.4	1.8	49.3	48.7	6.8	20.9	52.2	2.1	53.8
Queue Length 50th (ft)	93	0	209	211	0	33	230	0	121
Queue Length 95th (ft)	151	0	4381	247	68	339	25	204	332
Internal Link Dist (ft)	33	0	935	935	546	546	255	330	494
Turn Bay Length (ft)	401	480	518	526	690	378	593	1166	529
Base Capacity (vph)	0	0	0	0	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.20	0.63	0.63	0.42	0.22	0.60	0.39	0.67

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 100.5	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	



HCM Signalized Intersection Capacity Analysis
6: Main St & Publix Drwy/E Cherokee Dr

Build SAT Improved
1/20/2016

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4
Traffic Volume (vph)	52	59	59	517	62	269	76	307	422	315
Future Volume (vph)	52	59	59	517	62	269	76	307	422	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00
Flt	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.98	1.00	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1817	1583	1681	1708	1583	1770	1863	1583	1863	1583
Flt Permitted	0.98	1.00	0.95	0.97	1.00	0.47	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1817	1583	1681	1708	1583	880	1863	1583	1863	1583
Peak-hour factor, PHF	0.73	0.83	0.63	0.92	0.67	0.92	0.91	0.86	0.94	0.89
Adj. Flow (vph)	71	71	94	562	93	292	84	357	449	354
RTOR Reduction (vph)	0	0	81	0	0	218	0	0	223	0
Lane Group Flow (vph)	0	142	13	326	329	74	84	357	226	354
Turn Type	Split	NA	Perm	Split	NA	Perm	pm-pt	NA	pt-ov	Prot
Protected Phases	4	4	4	8	8	8	2	2	2	8
Permitted Phases	4	4	4	8	8	8	2	2	2	8
Actuated Green, G (s)	13.6	13.6	13.6	25.5	25.5	25.5	31.9	25.4	50.9	14.2
Effective Green, g (s)	13.6	13.6	13.6	25.5	25.5	25.5	31.9	25.4	50.9	14.2
Actuated g/C Ratio	0.13	0.13	0.13	0.25	0.25	0.25	0.32	0.25	0.50	0.14
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.5	5.0	5.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	244	212	423	430	398	334	467	796	481	609
v/s Ratio Prot	c0.08	c0.19	c0.19	0.19	0.19	0.02	c0.19	0.14	c0.10	0.19
v/s Ratio Perm	0.01	0.01	0.01	0.05	0.05	0.06	0.06	0.06	0.06	0.01
v/c Ratio	0.58	0.06	0.77	0.77	0.77	0.18	0.25	0.76	0.28	0.74
Uniform Delay, d1	41.1	38.2	35.1	35.1	29.7	25.0	35.1	14.6	41.7	28.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.5	0.1	8.4	7.9	0.2	0.4	8.6	0.4	5.8	2.2
Delay (s)	44.6	38.3	43.6	43.0	29.9	25.4	43.7	15.0	47.5	30.5
Level of Service	D	D	D	D	C	C	C	B	D	C
Approach Delay (s)	42.1			39.2			27.5		38.3	
Approach LOS	D			D			C		D	

Intersection Summary	
HCM 2000 Control Delay	35.5
HCM 2000 Volume to Capacity ratio	0.73
Actuated Cycle Length (s)	101.2
Intersection Capacity Utilization	61.5%
Analysis Period (min)	15
c Critical Lane Group	

HCM Unsignalized Intersection Capacity Analysis 7: Main St & Rope Mill Rd/E Main St

HCM Unsignalized Intersection Capacity Analysis 8: Woodstock Pkwy & Outlet Shopping Drwy/Rope Mill Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	8	0	110	19	2	9	81	410	18	9	510	15
Traffic Volume (veh/h)	8	0	110	19	2	9	81	410	18	9	510	15
Future Volume (veh/h)	8	0	110	19	2	9	81	410	18	9	510	15
Sign Control	Stop	0%	Stop	0%	Stop	0%	Free	0%	Free	0%	Free	0%
Grade	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.58	0.25	0.81	0.47	0.50	0.92	0.55	0.85	0.57	0.25	0.92	0.70
Hourly flow rate (vph)	14	0	136	40	4	10	147	482	32	36	554	21
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None				None
Median storage (veh)												
Upstream signal (ft)												
pX platoon unblocked												
VC, conflicting volume	1440	1444	564	1564	1439	498	575					514
VC1, stage 1 conf vol												
VC2, stage 2 conf vol												
VCu, unblocked vol	1440	1444	564	1564	1439	498	575					514
IC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1					4.1
IC, 2 stage (s)												
IF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2					2.2
p0 queue free %	85	100	74	31	96	98	85					97
CM capacity (veh/h)	91	109	525	58	109	572	998					1052
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	150	54	661	611								
Volume Left	14	40	147	36								
Volume Right	136	10	32	21								
cSH	364	73	998	1052								
Volume to Capacity	0.41	0.74	0.15	0.03								
Queue Length 95th (ft)	49	87	13	3								
Control Delay (s)	21.7	138.2	3.6	0.9								
Lane LOS	C	F	A	A								
Approach Delay (s)	21.7	138.2	3.6	0.9								
Approach LOS	C	F										
Intersection Summary												
Average Delay												9.2
Intersection Capacity Utilization												73.8%
Analysis Period (min)												15
												ICU Level of Service
												D

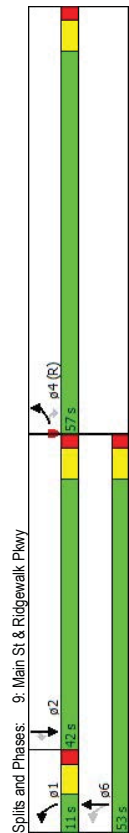
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	52	49	100	18	31	66	107	140	30	57	90	18
Future Volume (veh/h)	52	49	100	18	31	66	107	140	30	57	90	18
Peak Hour Factor	0.59	0.50	0.81	0.80	0.78	0.73	0.84	0.83	0.68	0.81	0.75	0.57
Hourly flow rate (vph)	88	98	123	23	40	90	127	169	44	70	120	32
Approach Volume (veh/h)												
Crossing Volume (veh/h)	309	213		153	384		340	256		190		
High Capacity (veh/h)	1172			1024			1133			1193		
High v/c (veh/h)	0.26			0.15			0.30			0.19		
Low Capacity (veh/h)	968			835			933			988		
Low v/c (veh/h)	0.32			0.18			0.36			0.22		
Intersection Summary												
Maximum v/c High												0.30
Maximum v/c Low												0.36
Intersection Capacity Utilization												45.6%
												ICU Level of Service
												A

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	622	190	196	245	335	738
Future Volume (vph)	622	190	196	245	335	738
Future Volume (vph)	622	190	196	245	335	738
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fit Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Fit Permitted	0.95	1.00	0.24	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	451	1863	1863	1583
Peak-hour factor, PHF	0.87	0.80	0.88	0.90	0.89	0.88
Adj. Flow (vph)	715	238	223	272	376	839
RTOR Reduction (vph)	0	111	0	0	0	418
Lane Group Flow (vph)	715	127	223	272	376	421
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4	1	6	2		
Permitted Phases		4	6		2	
Actuated Green, G (s)	55.4	55.4	42.6	42.6	31.6	31.6
Effective Green, g (s)	55.4	55.4	42.6	42.6	31.6	31.6
Actuated g/C Ratio	0.50	0.50	0.39	0.39	0.29	0.29
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	5.0	5.0
Lane Grp Cap (vph)	891	797	234	721	535	454
v/s Ratio Prot	c0.40		c0.04	0.15	0.20	
v/s Ratio Perm		0.08	c0.33			0.27
v/c Ratio	0.80	0.16	0.95	0.38	0.70	0.93
Uniform Delay, d1	22.7	14.7	34.7	24.2	35.0	38.1
Progression Factor	0.96	2.89	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.7	0.4	45.5	0.7	5.2	26.1
Delay (s)	28.5	43.0	80.3	24.9	40.2	64.2
Level of Service	C	D	F	C	D	E
Approach Delay (s)	32.1		49.8	56.8		
Approach LOS	C		D	E		
Intersection Summary						
HCM 2000 Control Delay			46.6			D
HCM 2000 Volume to Capacity ratio			0.90			
Actuated Cycle Length (s)			110.0			18.0
Intersection Capacity Utilization			78.0%			D
Analysis Period (min)			15			
c Critical Lane Group						



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	622	190	196	245	335	738
Future Volume (vph)	622	190	196	245	335	738
Future Volume (vph)	622	190	196	245	335	738
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fit Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Fit Permitted	0.95	1.00	0.24	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	451	1863	1863	1583
Peak-hour factor, PHF	0.87	0.80	0.88	0.90	0.89	0.88
Adj. Flow (vph)	715	238	223	272	376	839
RTOR Reduction (vph)	0	111	0	0	0	418
Lane Group Flow (vph)	715	127	223	272	376	421
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4	1	6	2		
Permitted Phases		4	6		2	
Actuated Green, G (s)	55.4	55.4	42.6	42.6	31.6	31.6
Effective Green, g (s)	55.4	55.4	42.6	42.6	31.6	31.6
Actuated g/C Ratio	0.50	0.50	0.39	0.39	0.29	0.29
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	5.0	5.0
Lane Grp Cap (vph)	891	797	234	721	535	454
v/s Ratio Prot	c0.40		c0.04	0.15	0.20	
v/s Ratio Perm		0.08	c0.33			0.27
v/c Ratio	0.80	0.16	0.95	0.38	0.70	0.93
Uniform Delay, d1	22.7	14.7	34.7	24.2	35.0	38.1
Progression Factor	0.96	2.89	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.7	0.4	45.5	0.7	5.2	26.1
Delay (s)	28.5	43.0	80.3	24.9	40.2	64.2
Level of Service	C	D	F	C	D	E
Approach Delay (s)	32.1		49.8	56.8		
Approach LOS	C		D	E		
Intersection Summary						
HCM 2000 Control Delay			46.6			D
HCM 2000 Volume to Capacity ratio			0.90			
Actuated Cycle Length (s)			110.0			18.0
Intersection Capacity Utilization			78.0%			D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis
 12: Ridge Tr & Site Driveway 4

Build SAT Improved
 1/20/2016

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			4	P	
Traffic Volume (veh/h)	220	16	16	171	197	159
Future Volume (veh/h)	220	16	16	171	197	159
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	239	17	17	186	214	173
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					362	
pX platoon unblocked	0.89	0.89	0.89			
VC conflicting volume	520	300	387			
VC1 stage 1 conf vol						
VC2 stage 2 conf vol						
VCu unblocked vol	404	157	254			
IC single (s)	6.4	6.2	4.1			
IC 2 stage (s)						
IF (s)	3.5	3.3	2.2			
p0 queue free %	55	98	99			
CM capacity (veh/h)	531	793	1171			
Direction Lane #	EB 1	NB 1	SB 1			
Volume Total	256	203	387			
Volume Left	239	17	0			
Volume Right	17	0	173			
cSH	543	1171	1700			
Volume to Capacity	0.47	0.01	0.23			
Queue Length 95th (ft)	63	1	0			
Control Delay (s)	17.4	0.8	0.0			
Lane LOS	C	A				
Approach Delay (s)	17.4	0.8	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			5.5			
Intersection Capacity Utilization			42.1%			A
Analysis Period (min)			15			

GDOT Roundabout Analysis Sheets

General & Site Information		v2.1	
Analyst:	MSN		
Agency/Co:	A&R Engineering		
Date:	1/20/2016		
Project or PI#:	15-122 Mixed Use Development-Ridgewalk Pkwy		
Year, Peak Hour:	2015 AM		
County/District:	Cherokee County		
Intersection Name:	Woodstock Pkwy @ Rope Mill Rd/Outlet Shoppes Drwy		

Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			54		99		24	
	NE (2), vph								
	E (3), vph	57				45		36	
	SE (4), vph								
	S (5), vph	201		63				39	
	SW (6), vph								
	W (7), vph	27		36		60			
	NW (8), vph								
Output	Total Vehicles	285	0	153	0	204	0	99	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	100%	100%	100%	100%	100%	100%	100%	100%
% Heavy Vehicles	0%	0%	0%	0%	0%	0%	0%	0%
% Bicycle	0%	0%	0%	0%	0%	0%	0%	0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.73	0.92	0.60	0.92	0.83	0.92	0.75	0.92
F _{HV}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	90	0	120	0	32	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	78	0	0	0	55	0	48	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	276	0	105	0	0	0	52	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	37	0	60	0	73	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	391	0	255	0	247	0	132	0
Conflicting flow, pcu/h	238	0	225	0	158	0	459	0

Roundabout Type	Standard Single Lane or Urban Compact
Enter type here...	Standard Single Lane

Results: Approach Measures of Effectiveness								
HCM 2010 Model (build)	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	891	NA	903	NA	965	NA	714	NA
Entry Flow Rates, vph	391	NA	255	NA	247	NA	132	NA
V/C ratio	0.44		0.28		0.26		0.18	
Control Delay, s/veh	9		7		6		7	
LOS	A		A		A		A	
95th % Queue (ft)	57		29		26		17	
Calibrated Model (future)	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	1102	NA	1114	NA	1174	NA	923	NA
Entry Flow Rates, vph	391	NA	255	NA	247	NA	132	NA
V/C ratio	0.36		0.23		0.21		0.14	
Control Delay, sec/pcu	7		5		5		5	
LOS	A		A		A		A	
95th % Queue (ft)	41		22		20		12	

Notes:

v2.1

General & Site Information		v2.1
Analyst:	MSN	
Agency/Co:	A&R Engineering	
Date:	1/20/2016	
Project or PI#:	15-122 Mixed Use Development-Ridgewalk Pkwy	
Year, Peak Hour:	2015 PM	
County/District:	Cherokee County	
Intersection Name:	Woodstock Pkwy @ Rope Mill Rd/Outlet Shoppes Drwy	

Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			54		173		18	
	NE (2), vph								
	E (3), vph	35				19		32	
	SE (4), vph								
	S (5), vph	43		20				77	
	SW (6), vph								
	W (7), vph	10		35		41			
	NW (8), vph								
Output	Total Vehicles	88	0	109	0	233	0	127	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	100%	100%	100%	100%	100%	100%	100%	100%
% Heavy Vehicles	0%	0%	0%	0%	0%	0%	0%	0%
% Bicycle	0%	0%	0%	0%	0%	0%	0%	0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.70	0.92	0.89	0.92	0.73	0.92	0.91	0.92
F _{HV}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	61	0	238	0	20	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	50	0	0	0	26	0	35	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	62	0	22	0	0	0	85	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	14	0	39	0	56	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	126	0	123	0	320	0	140	0
Conflicting flow, pcu/h	118	0	314	0	105	0	135	0

Roundabout Type	Standard Single Lane or Urban Compact
Enter type here...	Standard Single Lane

Results: Approach Measures of Effectiveness								
HCM 2010 Model (build)	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	1004	NA	825	NA	1017	NA	988	NA
Entry Flow Rates, vph	126	NA	123	NA	320	NA	140	NA
V/C ratio	0.13		0.15		0.32		0.14	
Control Delay, s/veh	5		6		7		5	
LOS	A		A		A		A	
95th % Queue (ft)	11		13		34		12	
Calibrated Model (future)	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	1213	NA	1037	NA	1225	NA	1197	NA
Entry Flow Rates, vph	126	NA	123	NA	320	NA	140	NA
V/C ratio	0.10		0.12		0.26		0.12	
Control Delay, sec/pcu	4		5		5		4	
LOS	A		A		A		A	
95th % Queue (ft)	9		10		26		10	

Notes:

v2.1

General & Site Information		v2.1	
Analyst:	MSN		
Agency/Co:	A&R Engineering		
Date:	1/20/2016		
Project or PI#:	15-122 Mixed Use Development-Ridgewalk Pkwy		
Year, Peak Hour:	2015 SAT		
County/District:	Cherokee County		
Intersection Name:	Woodstock Pkwy @ Rope Mill Rd/Outlet Shoppes Drwy		

Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			35		70		47	
	NE (2), vph								
	E (3), vph	29				27		44	
	SE (4), vph								
	S (5), vph	30		16				91	
	SW (6), vph								
	W (7), vph	16		28		97			
	NW (8), vph								
Output	Total Vehicles	75	0	79	0	194	0	182	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	100%	100%	100%	100%	100%	100%	100%	100%
% Heavy Vehicles	0%	0%	0%	0%	0%	0%	0%	0%
% Bicycle	0%	0%	0%	0%	0%	0%	0%	0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.75	0.92	0.78	0.92	0.83	0.92	0.50	0.92
F _{HV}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	45	0	84	0	94	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	39	0	0	0	32	0	88	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	40	0	21	0	0	0	182	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	21	0	36	0	116	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	100	0	102	0	233	0	364	0
Conflicting flow, pcu/h	173	0	294	0	221	0	99	0

Roundabout Type	Standard Single Lane or Urban Compact
Enter type here...	Standard Single Lane

Results: Approach Measures of Effectiveness								
HCM 2010 Model (build)	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	950	NA	842	NA	906	NA	1023	NA
Entry Flow Rates, vph	100	NA	102	NA	233	NA	364	NA
V/C ratio	0.11		0.12		0.26		0.36	
Control Delay, s/veh	5		5		7		7	
LOS	A		A		A		A	
95th % Queue (ft)	9		10		26		41	
Calibrated Model (future)	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	1161	NA	1053	NA	1117	NA	1231	NA
Entry Flow Rates, vph	100	NA	102	NA	233	NA	364	NA
V/C ratio	0.09		0.10		0.21		0.30	
Control Delay, sec/pcu	4		4		5		6	
LOS	A		A		A		A	
95th % Queue (ft)	7		8		20		31	

Notes:

v2.1

General & Site Information		v2.1	
Analyst:	MSN		
Agency/Co:	A&R Engineering		
Date:	1/20/2016		
Project or PI#:	15-122 Mixed Use Development-Ridgewalk Pkwy		
Year, Peak Hour:	2015 AM		
County/District:	Cherokee County		
Intersection Name:	Woodstock Pkwy @ Rope Mill Rd/Outlet Shoppes Drwy		

Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			60		109		26	
	NE (2), vph								
	E (3), vph	63				50		40	
	SE (4), vph								
	S (5), vph	222		70				43	
	SW (6), vph								
	W (7), vph	30		40		66			
	NW (8), vph								
Output	Total Vehicles	315	0	170	0	225	0	109	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	100%	100%	100%	100%	100%	100%	100%	100%
% Heavy Vehicles	0%	0%	0%	0%	0%	0%	0%	0%
% Bicycle	0%	0%	0%	0%	0%	0%	0%	0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.73	0.92	0.60	0.92	0.83	0.92	0.75	0.92
F _{HV}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	100	0	132	0	35	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	87	0	0	0	61	0	53	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	305	0	117	0	0	0	57	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	41	0	67	0	80	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	433	0	283	0	273	0	145	0
Conflicting flow, pcu/h	263	0	247	0	175	0	508	0

Roundabout Type	Standard Single Lane or Urban Compact
Enter type here...	Standard Single Lane

Results: Approach Measures of Effectiveness								
HCM 2010 Model (build)	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	868	NA	883	NA	949	NA	680	NA
Entry Flow Rates, vph	433	NA	283	NA	273	NA	145	NA
V/C ratio	0.50		0.32		0.29		0.21	
Control Delay, s/veh	11		8		7		8	
LOS	B		A		A		A	
95th % Queue (ft)	71		35		30		20	
Calibrated Model (future)	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	1080	NA	1094	NA	1159	NA	888	NA
Entry Flow Rates, vph	433	NA	283	NA	273	NA	145	NA
V/C ratio	0.40		0.26		0.24		0.16	
Control Delay, sec/pcu	8		6		5		6	
LOS	A		A		A		A	
95th % Queue (ft)	49		26		23		15	

Notes:

v2.1

General & Site Information		v2.1
Analyst:	MSN	
Agency/Co:	A&R Engineering	
Date:	1/20/2016	
Project or PI#:	15-122 Mixed Use Development-Ridgewalk Pkwy	
Year, Peak Hour:	2015 PM	
County/District:	Cherokee County	
Intersection Name:	Woodstock Pkwy @ Rope Mill Rd/Outlet Shoppes Drwy	

Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			60		191		20	
	NE (2), vph								
	E (3), vph	39				21		35	
	SE (4), vph								
	S (5), vph	47		22				85	
	SW (6), vph								
	W (7), vph	11		39		45			
	NW (8), vph								
Output	Total Vehicles	97	0	121	0	257	0	140	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	100%	100%	100%	100%	100%	100%	100%	100%
% Heavy Vehicles	0%	0%	0%	0%	0%	0%	0%	0%
% Bicycle	0%	0%	0%	0%	0%	0%	0%	0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.70	0.92	0.89	0.92	0.73	0.92	0.91	0.92
F _{HV}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	67	0	263	0	22	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	56	0	0	0	29	0	39	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	68	0	25	0	0	0	94	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	16	0	44	0	62	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	139	0	136	0	354	0	155	0
Conflicting flow, pcu/h	131	0	347	0	117	0	148	0

Roundabout Type	Standard Single Lane or Urban Compact
Enter type here...	Standard Single Lane

Results: Approach Measures of Effectiveness								
HCM 2010 Model (build)	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	992	NA	799	NA	1005	NA	974	NA
Entry Flow Rates, vph	139	NA	136	NA	354	NA	155	NA
V/C ratio	0.14		0.17		0.35		0.16	
Control Delay, s/veh	5		6		7		5	
LOS	A		A		A		A	
95th % Queue (ft)	12		15		40		14	
Calibrated Model (future)	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	1201	NA	1010	NA	1214	NA	1184	NA
Entry Flow Rates, vph	139	NA	136	NA	354	NA	155	NA
V/C ratio	0.12		0.13		0.29		0.13	
Control Delay, sec/pcu	4		5		6		4	
LOS	A		A		A		A	
95th % Queue (ft)	10		12		30		11	

Notes:

v2.1

General & Site Information		v2.1	
Analyst:	MSN		
Agency/Co:	A&R Engineering		
Date:	1/20/2016		
Project or PI#:	15-122 Mixed Use Development-Ridgewalk Pkwy		
Year, Peak Hour:	2015 SAT		
County/District:	Cherokee County		
Intersection Name:	Woodstock Pkwy @ Rope Mill Rd/Outlet Shoppes Drwy		

Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			39		77		52	
	NE (2), vph								
	E (3), vph	32				30		49	
	SE (4), vph								
	S (5), vph	33		18				100	
	SW (6), vph								
	W (7), vph	18		31		107			
	NW (8), vph								
Output	Total Vehicles	83	0	88	0	214	0	201	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	100%	100%	100%	100%	100%	100%	100%	100%
% Heavy Vehicles	0%	0%	0%	0%	0%	0%	0%	0%
% Bicycle	0%	0%	0%	0%	0%	0%	0%	0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.75	0.92	0.78	0.92	0.83	0.92	0.50	0.92
F _{HV}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	50	0	92	0	104	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	43	0	0	0	36	0	98	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	44	0	23	0	0	0	200	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	24	0	40	0	128	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	111	0	113	0	257	0	402	0
Conflicting flow, pcu/h	191	0	325	0	245	0	110	0

Roundabout Type	Standard Single Lane or Urban Compact
Enter type here...	Standard Single Lane

Results: Approach Measures of Effectiveness								
HCM 2010 Model (build)	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	933	NA	817	NA	885	NA	1012	NA
Entry Flow Rates, vph	111	NA	113	NA	257	NA	402	NA
V/C ratio	0.12		0.14		0.29		0.40	
Control Delay, s/veh	5		6		7		8	
LOS	A		A		A		A	
95th % Queue (ft)	10		12		30		48	
Calibrated Model (future)	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	1144	NA	1028	NA	1096	NA	1221	NA
Entry Flow Rates, vph	111	NA	113	NA	257	NA	402	NA
V/C ratio	0.10		0.11		0.23		0.33	
Control Delay, sec/pcu	4		4		5		6	
LOS	A		A		A		A	
95th % Queue (ft)	8		9		23		36	

Notes:

v2.1

General & Site Information		v2.1	
Analyst:	MSN		
Agency/Co:	A&R Engineering		
Date:	1/20/2016		
Project or PI#:	15-122 Mixed Use Development-Ridgewalk Pkwy		
Year, Peak Hour:	2015 AM		
County/District:	Cherokee County		
Intersection Name:	Woodstock Pkwy @ Rope Mill Rd/Outlet Shoppes Drwy		

Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			71		135		26	
	NE (2), vph								
	E (3), vph	73				50		40	
	SE (4), vph								
	S (5), vph	244		70				43	
	SW (6), vph								
	W (7), vph	30		40		66			
	NW (8), vph								
Output	Total Vehicles	347	0	181	0	251	0	109	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	100%	100%	100%	100%	100%	100%	100%	100%
% Heavy Vehicles	0%	0%	0%	0%	0%	0%	0%	0%
% Bicycle	0%	0%	0%	0%	0%	0%	0%	0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.73	0.92	0.60	0.92	0.83	0.92	0.75	0.92
F _{HV}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	118	0	164	0	35	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	100	0	0	0	61	0	53	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	335	0	117	0	0	0	57	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	41	0	67	0	80	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	477	0	302	0	304	0	145	0
Conflicting flow, pcu/h	263	0	278	0	188	0	552	0

Roundabout Type	Standard Single Lane or Urban Compact
Enter type here...	Standard Single Lane

Results: Approach Measures of Effectiveness								
HCM 2010 Model (build)	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	868	NA	855	NA	936	NA	651	NA
Entry Flow Rates, vph	477	NA	302	NA	304	NA	145	NA
V/C ratio	0.55		0.35		0.33		0.22	
Control Delay, s/veh	12		8		7		8	
LOS	B		A		A		A	
95th % Queue (ft)	85		40		35		21	
Calibrated Model (future)	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	1080	NA	1067	NA	1147	NA	857	NA
Entry Flow Rates, vph	477	NA	302	NA	304	NA	145	NA
V/C ratio	0.44		0.28		0.27		0.17	
Control Delay, sec/pcu	8		6		6		6	
LOS	A		A		A		A	
95th % Queue (ft)	58		29		27		15	

Notes:

v2.1

General & Site Information		v2.1	
Analyst:	MSN		
Agency/Co:	A&R Engineering		
Date:	1/20/2016		
Project or PI#:	15-122 Mixed Use Development-Ridgewalk Pkwy		
Year, Peak Hour:	2015 PM		
County/District:	Cherokee County		
Intersection Name:	Woodstock Pkwy @ Rope Mill Rd/Outlet Shoppes Drwy		

Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			80		237		20	
	NE (2), vph								
	E (3), vph	61				21		35	
	SE (4), vph								
	S (5), vph	100		22				85	
	SW (6), vph								
	W (7), vph	11		39		45			
	NW (8), vph								
Output	Total Vehicles	172	0	141	0	303	0	140	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	100%	100%	100%	100%	100%	100%	100%	100%
% Heavy Vehicles	0%	0%	0%	0%	0%	0%	0%	0%
% Bicycle	0%	0%	0%	0%	0%	0%	0%	0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.70	0.92	0.89	0.92	0.73	0.92	0.91	0.92
F _{HV}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	90	0	326	0	22	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	88	0	0	0	29	0	39	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	144	0	25	0	0	0	94	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	16	0	44	0	62	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	247	0	159	0	417	0	155	0
Conflicting flow, pcu/h	131	0	410	0	148	0	256	0

Roundabout Type	Standard Single Lane or Urban Compact
Enter type here...	Standard Single Lane

Results: Approach Measures of Effectiveness								
HCM 2010 Model (build)	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	992	NA	750	NA	974	NA	875	NA
Entry Flow Rates, vph	247	NA	159	NA	417	NA	155	NA
V/C ratio	0.25		0.21		0.43		0.18	
Control Delay, s/veh	6		7		9		6	
LOS	A		A		A		A	
95th % Queue (ft)	25		20		54		16	
Calibrated Model (future)	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	1201	NA	960	NA	1184	NA	1086	NA
Entry Flow Rates, vph	247	NA	159	NA	417	NA	155	NA
V/C ratio	0.21		0.17		0.35		0.14	
Control Delay, sec/pcu	5		5		6		5	
LOS	A		A		A		A	
95th % Queue (ft)	19		15		40		12	

Notes:

v2.1

General & Site Information		v2.1	
Analyst:	MSN		
Agency/Co:	A&R Engineering		
Date:	1/20/2016		
Project or PI#:	15-122 Mixed Use Development-Ridgewalk Pkwy		
Year, Peak Hour:	2015 SAT		
County/District:	Cherokee County		
Intersection Name:	Woodstock Pkwy @ Rope Mill Rd/Outlet Shoppes Drwy		

Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			66		140		52	
	NE (2), vph								
	E (3), vph	57				30		49	
	SE (4), vph								
	S (5), vph	90		18				100	
	SW (6), vph								
	W (7), vph	18		31		107			
	NW (8), vph								
Output	Total Vehicles	165	0	115	0	277	0	201	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	100%	100%	100%	100%	100%	100%	100%	100%
% Heavy Vehicles	0%	0%	0%	0%	0%	0%	0%	0%
% Bicycle	0%	0%	0%	0%	0%	0%	0%	0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.75	0.92	0.78	0.92	0.83	0.92	0.50	0.92
F _{HV}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	85	0	168	0	104	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	76	0	0	0	36	0	98	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	120	0	23	0	0	0	200	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	24	0	40	0	128	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	220	0	148	0	333	0	402	0
Conflicting flow, pcu/h	191	0	401	0	278	0	219	0

Roundabout Type	Standard Single Lane or Urban Compact
Enter type here...	Standard Single Lane

Results: Approach Measures of Effectiveness								
HCM 2010 Model (build)	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	933	NA	757	NA	856	NA	908	NA
Entry Flow Rates, vph	220	NA	148	NA	333	NA	402	NA
V/C ratio	0.24		0.20		0.39		0.44	
Control Delay, s/veh	6		7		9		9	
LOS	A		A		A		A	
95th % Queue (ft)	23		18		46		58	
Calibrated Model (future)	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	1144	NA	968	NA	1067	NA	1119	NA
Entry Flow Rates, vph	220	NA	148	NA	333	NA	402	NA
V/C ratio	0.19		0.15		0.31		0.36	
Control Delay, sec/pcu	5		5		6		7	
LOS	A		A		A		A	
95th % Queue (ft)	18		13		33		41	

Notes:

v2.1

Traffic Volume Worksheets

15-122 Mixed Use Development-Ridgewalk Pkwy- Woodstock GA

Traffic Volumes
Future Conditions

A&R Engineering
January 2016

1 Ridgewalk Pkwy @ I-575 SB

A.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	0	0	0	355	3	24	382	0	159	138	297	411	84	0	495
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	0	0	0	0	392	3	26	421	0	176	152	328	454	93	0	547
New Trips (North Tract)	0	0	0	0	56	0	0	56	0	9	0	9	76	10	0	86
Pass-by Trips (North Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Trips (South Tract)	0	0	0	0	34	0	0	34	0	5	0	5	16	2	0	18
Pass-by Trips (South Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	0	0	0	0	90	0	0	90	0	14	0	14	92	12	0	104
Total Pass-by Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future Traffic Volumes:	0	0	0	0	482	3	26	511	0	190	152	342	546	105	0	651

P.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	0	0	0	217	2	37	256	0	98	63	161	628	222	0	850
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	0	0	0	0	240	2	41	283	0	108	70	178	693	245	0	938
New Trips (North Tract)	0	0	0	0	124	0	0	124	0	20	0	20	154	21	0	175
Pass-by Trips (North Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Trips (South Tract)	0	0	0	0	39	0	0	39	0	6	0	6	72	10	0	82
Pass-by Trips (South Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	0	0	0	0	163	0	0	163	0	26	0	26	226	31	0	257
Total Pass-by Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future Traffic Volumes:	0	0	0	0	403	2	41	446	0	134	70	204	919	276	0	1195

Saturday Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	0	0	0	302	3	20	325	0	87	100	187	655	137	0	792
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	0	0	0	0	333	3	22	358	0	96	110	206	723	151	0	874
New Trips (North Tract)	0	0	0	0	163	0	0	163	0	26	0	26	180	24	0	204
Pass-by Trips (North Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Trips (South Tract)	0	0	0	0	60	0	0	60	0	10	0	10	66	9	0	75
Pass-by Trips (South Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	0	0	0	0	223	0	0	223	0	36	0	36	246	33	0	279
Total Pass-by Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future Traffic Volumes:	0	0	0	0	556	3	22	581	0	132	110	242	969	184	0	1153

15-122 Mixed Use Development-Ridgewalk Pkwy- Woodstock GA**Traffic Volumes
Future Conditions****A&R Engineering
January 2016****2 Ridgewalk Pkwy @ I-575 NB****A.M. Peak Hour**

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	41	0	358	399	0	0	0	0	43	468	0	511	0	452	160	612
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	45	0	395	440	0	0	0	0	47	517	0	564	0	499	177	676
New Trips (North Tract)	0	0	67	67	0	0	0	0	0	65	0	65	0	86	64	150
Pass-by Trips (North Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Trips (South Tract)	0	0	41	41	0	0	0	0	0	39	0	39	0	18	13	31
Pass-by Trips (South Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	0	0	108	108	0	0	0	0	0	104	0	104	0	104	77	181
Total Pass-by Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future Traffic Volumes:	45	0	503	548	0	0	0	0	47	621	0	668	0	603	254	857

P.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	119	0	506	625	0	0	0	0	33	276	0	309	0	725	383	1108
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	131	0	559	690	0	0	0	0	36	305	0	341	0	800	423	1223
New Trips (North Tract)	0	0	149	149	0	0	0	0	0	144	0	144	0	175	129	304
Pass-by Trips (North Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Trips (South Tract)	0	0	47	47	0	0	0	0	0	45	0	45	0	82	60	142
Pass-by Trips (South Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	0	0	196	196	0	0	0	0	0	189	0	189	0	257	189	446
Total Pass-by Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future Traffic Volumes:	131	0	755	886	0	0	0	0	36	494	0	530	0	1057	612	1669

Saturday Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	73	0	792	865	0	0	0	0	25	367	0	392	0	737	251	988
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	81	0	874	955	0	0	0	0	28	405	0	433	0	814	277	1091
New Trips (North Tract)	0	0	196	196	0	0	0	0	0	189	0	189	0	204	150	354
Pass-by Trips (North Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Trips (South Tract)	0	0	71	71	0	0	0	0	0	69	0	69	0	74	55	129
Pass-by Trips (South Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	0	0	267	267	0	0	0	0	0	258	0	258	0	278	205	483
Total Pass-by Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future Traffic Volumes:	81	0	1141	1222	0	0	0	0	28	663	0	691	0	1092	482	1574

15-122 Mixed Use Development-Ridgewalk Pkwy- Woodstock GA

Traffic Volumes
Future Conditions

A&R Engineering
January 2016

3 Ridgewalk Pkwy @ Outlet Drwy

A.M. Peak Hour

Condition	Northbound					Southbound					Eastbound					Westbound			
	L	T	R	Tot		L	T	R	Tot		L	T	R	Tot		L	T	R	Tot
Existing:	105	5	51	161		29	10	59	98		69	557	202	828		58	435	42	535
Growth Factor (%):	2	2	2			2	2	2			2	2	2			2	2	2	
Base Condition:	116	6	56	178		32	11	65	108		76	615	223	914		64	480	46	590
New Trips (North Tract)	0	0	4	4		0	0	0	0		0	132	0	132		5	150	0	155
Pass-by Trips (North Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
New Trips (South Tract)	0	0	3	3		0	0	0	0		0	80	0	80		1	31	0	32
Pass-by Trips (South Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Total New Trips	0	0	7	7		0	0	0	0		0	212	0	212		6	181	0	187
Total Pass-by Trips	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Future Traffic Volumes:	116	6	63	185		32	11	65	108		76	827	223	1126		70	661	46	777

P.M. Peak Hour

Condition	Northbound					Southbound					Eastbound					Westbound			
	L	T	R	Tot		L	T	R	Tot		L	T	R	Tot		L	T	R	Tot
Existing:	256	19	87	362		52	14	169	235		64	525	232	821		69	703	63	835
Growth Factor (%):	2	2	2			2	2	2			2	2	2			2	2	2	
Base Condition:	283	21	96	400		57	15	187	259		71	580	256	907		76	776	70	922
New Trips (North Tract)	0	0	10	10		0	0	0	0		0	293	0	293		10	303	0	313
Pass-by Trips (North Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
New Trips (South Tract)	0	0	3	3		0	0	0	0		0	92	0	92		5	142	0	147
Pass-by Trips (South Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Total New Trips	0	0	13	13		0	0	0	0		0	385	0	385		15	445	0	460
Total Pass-by Trips	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Future Traffic Volumes:	283	21	109	413		57	15	187	259		71	965	256	1292		91	1221	70	1382

Saturday Peak Hour

Condition	Northbound					Southbound					Eastbound					Westbound			
	L	T	R	Tot		L	T	R	Tot		L	T	R	Tot		L	T	R	Tot
Existing:	474	33	162	669		44	15	131	190		89	371	702	1162		140	394	50	584
Growth Factor (%):	2	2	2			2	2	2			2	2	2			2	2	2	
Base Condition:	523	36	179	738		49	17	145	211		98	410	775	1283		155	435	55	645
New Trips (North Tract)	0	0	13	13		0	0	0	0		0	385	0	385		12	355	0	367
Pass-by Trips (North Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
New Trips (South Tract)	0	0	5	5		0	0	0	0		0	140	0	140		4	129	0	133
Pass-by Trips (South Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Total New Trips	0	0	18	18		0	0	0	0		0	525	0	525		16	484	0	500
Total Pass-by Trips	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Future Traffic Volumes:	523	36	197	756		49	17	145	211		98	935	775	1808		171	919	55	1145

15-122 Mixed Use Development-Ridgewalk Pkwy- Woodstock GA

Traffic Volumes
Future Conditions

A&R Engineering
January 2016

4 Ridgewalk Pkwy @ Woodstock Pk

A.M. Peak Hour

Condition	Northbound					Southbound					Eastbound					Westbound			
	L	T	R	Tot		L	T	R	Tot		L	T	R	Tot		L	T	R	Tot
Existing:	78	2	82	162		2	5	6	13		1	463	185	649		199	442	1	642
Growth Factor (%):	2	2	2			2	2	2			2	2	2			2	2	2	
Base Condition:	86	2	91	179		2	6	7	15		1	511	204	716		220	488	1	709
New Trips (North Tract)	0	0	22	22		0	0	0	0		0	137	0	137		25	155	0	180
Pass-by Trips (North Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
New Trips (South Tract)	0	0	14	14		0	0	0	0		0	83	0	83		5	32	0	37
Pass-by Trips (South Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Total New Trips	0	0	36	36		0	0	0	0		0	220	0	220		30	187	0	217
Total Pass-by Trips	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Future Traffic Volumes:	86	2	127	215		2	6	7	15		1	731	204	936		250	675	1	926

P.M. Peak Hour

Condition	Northbound					Southbound					Eastbound					Westbound			
	L	T	R	Tot		L	T	R	Tot		L	T	R	Tot		L	T	R	Tot
Existing:	107	7	179	293		1	2	5	8		10	620	57	687		88	719	5	812
Growth Factor (%):	2	2	2			2	2	2			2	2	2			2	2	2	
Base Condition:	118	8	198	324		1	2	6	9		11	685	63	759		97	794	6	897
New Trips (North Tract)	0	0	50	50		0	0	0	0		0	303	0	303		51	314	0	365
Pass-by Trips (North Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
New Trips (South Tract)	0	0	16	16		0	0	0	0		0	95	0	95		24	147	0	171
Pass-by Trips (South Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Total New Trips	0	0	66	66		0	0	0	0		0	398	0	398		75	461	0	536
Total Pass-by Trips	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Future Traffic Volumes:	118	8	264	390		1	2	6	9		11	1083	63	1157		172	1255	6	1433

Saturday Peak Hour

Condition	Northbound					Southbound					Eastbound					Westbound			
	L	T	R	Tot		L	T	R	Tot		L	T	R	Tot		L	T	R	Tot
Existing:	48	2	99	149		6	2	7	15		11	532	50	593		135	581	1	717
Growth Factor (%):	2	2	2			2	2	2			2	2	2			2	2	2	
Base Condition:	53	2	109	164		7	2	8	17		12	587	55	654		149	641	1	791
New Trips (North Tract)	0	0	65	65		0	0	0	0		0	398	0	398		60	367	0	427
Pass-by Trips (North Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
New Trips (South Tract)	0	0	24	24		0	0	0	0		0	145	0	145		22	134	0	156
Pass-by Trips (South Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Total New Trips	0	0	89	89		0	0	0	0		0	543	0	543		82	501	0	583
Total Pass-by Trips	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Future Traffic Volumes:	53	2	198	253		7	2	8	17		12	1130	55	1197		231	1142	1	1374

15-122 Mixed Use Development-Ridgewalk Pkwy- Woodstock GA

Traffic Volumes
Future Conditions

A&R Engineering
January 2016

5 Ridgewalk Pkwy @ Ridge Trail

A.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	167	0	70	237	0	0	0	0	0	487	76	563	19	451	0	470
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	184	0	77	261	0	0	0	0	0	538	84	622	21	498	0	519
New Trips (North Tract)	0	4	0	4	69	5	72	146	159	0	0	159	0	66	26	92
Pass-by Trips (North Tract)	0	0	0	0	25	0	10	35	26	-26	0	0	0	-10	10	0
New Trips (South Tract)	37	0	2	39	0	0	0	0	0	12	17	29	37	0	0	37
Pass-by Trips (South Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	37	4	2	43	69	5	72	146	159	12	17	188	37	66	26	129
Total Pass-by Trips	0	0	0	0	25	0	10	35	26	-26	0	0	0	-10	10	0
Future Traffic Volumes:	221	4	79	304	94	5	82	181	185	524	101	810	58	554	36	648

P.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	119	0	49	168	0	0	0	0	0	640	142	782	74	677	0	751
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	131	0	54	185	0	0	0	0	0	707	157	864	82	747	0	829
New Trips (North Tract)	0	10	0	10	139	10	146	295	353	0	0	353	0	135	57	192
Pass-by Trips (North Tract)	0	0	0	0	109	0	43	152	101	-101	0	0	0	-39	39	0
New Trips (South Tract)	171	0	9	180	0	0	0	0	0	56	19	75	42	0	0	42
Pass-by Trips (South Tract)	34	0	0	34	0	0	0	0	0	0	0	0	31	-31	0	0
Total New Trips	171	10	9	190	139	10	146	295	353	56	19	428	42	135	57	234
Total Pass-by Trips	34	0	0	34	109	0	43	152	101	-101	0	0	31	-70	39	0
Future Traffic Volumes:	336	10	63	409	248	10	189	447	454	662	176	1292	155	812	96	1063

Saturday Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	120	0	33	153	0	0	0	0	0	512	132	644	47	588	0	635
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	132	0	36	168	0	0	0	0	0	565	146	711	52	649	0	701
New Trips (North Tract)	0	13	0	13	162	12	171	345	464	0	0	464	0	162	74	236
Pass-by Trips (North Tract)	0	0	0	0	132	0	59	191	139	-139	0	0	0	-62	62	0
New Trips (South Tract)	155	0	8	163	0	0	0	0	0	51	30	81	64	0	0	64
Pass-by Trips (South Tract)	47	0	0	47	0	0	0	0	0	0	0	0	51	-51	0	0
Total New Trips	155	13	8	176	162	12	171	345	464	51	30	545	64	162	74	300
Total Pass-by Trips	47	0	0	47	132	0	59	191	139	-139	0	0	51	-113	62	0
Future Traffic Volumes:	334	13	44	391	294	12	230	536	603	477	176	1256	167	698	136	1001

15-122 Mixed Use Development-Ridgewalk Pkwy- Woodstock GA

Traffic Volumes
Future Conditions

A&R Engineering
January 2016

6 Main St @ E Cherokee Dr

A.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	16	100	285	401	464	499	7	970	3	105	17	125	468	20	274	762
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	18	110	315	443	512	551	8	1071	3	116	19	138	517	22	303	842
New Trips (North Tract)	0	20	25	45	0	18	0	18	0	0	0	0	22	0	0	22
Pass-by Trips (North Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Trips (South Tract)	0	4	5	9	0	11	0	11	0	0	0	0	14	0	0	14
Pass-by Trips (South Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	0	24	30	54	0	29	0	29	0	0	0	0	36	0	0	36
Total Pass-by Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future Traffic Volumes:	18	134	345	497	512	580	8	1100	3	116	19	138	553	22	303	878

P.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	98	381	543	1022	296	214	16	526	37	73	68	178	352	71	383	806
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	108	421	600	1129	327	236	18	581	41	81	75	197	389	78	423	890
New Trips (North Tract)	0	41	51	92	0	40	0	40	0	0	0	0	50	0	0	50
Pass-by Trips (North Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Trips (South Tract)	0	19	24	43	0	12	0	12	0	0	0	0	16	0	0	16
Pass-by Trips (South Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	0	60	75	135	0	52	0	52	0	0	0	0	66	0	0	66
Total Pass-by Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future Traffic Volumes:	108	481	675	1264	327	288	18	633	41	81	75	197	455	78	423	956

Saturday Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	69	218	308	595	285	232	11	528	47	53	53	153	388	56	244	688
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	76	241	340	657	315	256	12	583	52	59	59	170	428	62	269	759
New Trips (North Tract)	0	48	60	108	0	52	0	52	0	0	0	0	65	0	0	65
Pass-by Trips (North Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Trips (South Tract)	0	18	22	40	0	19	0	19	0	0	0	0	24	0	0	24
Pass-by Trips (South Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	0	66	82	148	0	71	0	71	0	0	0	0	89	0	0	89
Total Pass-by Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future Traffic Volumes:	76	307	422	805	315	327	12	654	52	59	59	170	517	62	269	848

15-122 Mixed Use Development-Ridgewalk Pkwy- Woodstock GA**Traffic Volumes
Future Conditions****A&R Engineering
January 2016****7 Main St @ Rope Mill Rd****A.M. Peak Hour**

Condition	Northbound					Southbound					Eastbound					Westbound			
	L	T	R	Tot		L	T	R	Tot		L	T	R	Tot		L	T	R	Tot
Existing:	105	180	2	287		4	481	25	510		12	2	135	149		1	0	0	1
Growth Factor (%):	2	2	2			2	2	2			2	2	2			2	2	2	
Base Condition:	116	199	2	317		4	531	28	563		13	2	149	164		1	0	0	1
New Trips (North Tract)	0	18	0	18		3	20	0	23		0	0	0	0		0	0	2	2
Pass-by Trips (North Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
New Trips (South Tract)	0	11	0	11		1	4	0	5		0	0	0	0		0	0	1	1
Pass-by Trips (South Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Total New Trips	0	29	0	29		4	24	0	28		0	0	0	0		0	0	3	3
Total Pass-by Trips	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Future Traffic Volumes:	116	228	2	346		8	555	28	591		13	2	149	164		1	0	3	4

P.M. Peak Hour

Condition	Northbound					Southbound					Eastbound					Westbound			
	L	T	R	Tot		L	T	R	Tot		L	T	R	Tot		L	T	R	Tot
Existing:	91	399	7	497		0	362	27	389		15	0	101	116		9	4	0	13
Growth Factor (%):	2	2	2			2	2	2			2	2	2			2	2	2	
Base Condition:	100	441	8	549		0	400	30	430		17	0	112	129		10	4	0	14
New Trips (North Tract)	0	40	0	40		5	41	0	46		0	0	0	0		0	0	5	5
Pass-by Trips (North Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
New Trips (South Tract)	0	12	0	12		2	19	0	21		0	0	0	0		0	0	2	2
Pass-by Trips (South Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Total New Trips	0	52	0	52		7	60	0	67		0	0	0	0		0	0	7	7
Total Pass-by Trips	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Future Traffic Volumes:	100	493	8	601		7	460	30	497		17	0	112	129		10	4	7	21

Saturday Peak Hour

Condition	Northbound					Southbound					Eastbound					Westbound			
	L	T	R	Tot		L	T	R	Tot		L	T	R	Tot		L	T	R	Tot
Existing:	73	307	16	396		1	402	14	417		7	0	100	107		17	2	0	19
Growth Factor (%):	2	2	2			2	2	2			2	2	2			2	2	2	
Base Condition:	81	339	18	438		1	444	15	460		8	0	110	118		19	2	0	21
New Trips (North Tract)	0	52	0	52		6	48	0	54		0	0	0	0		0	0	7	7
Pass-by Trips (North Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
New Trips (South Tract)	0	19	0	19		2	18	0	20		0	0	0	0		0	0	2	2
Pass-by Trips (South Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Total New Trips	0	71	0	71		8	66	0	74		0	0	0	0		0	0	9	9
Total Pass-by Trips	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Future Traffic Volumes:	81	410	18	509		9	510	15	534		8	0	110	118		19	2	9	30

15-122 Mixed Use Development-Ridgewalk Pkwy- Woodstock GA**Traffic Volumes
Future Conditions****A&R Engineering
January 2016****8 Woodstock Pkwy @ Rope Mill Rd****A.M. Peak Hour**

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	60	99	45	204	57	201	27	285	24	36	39	99	63	36	54	153
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	66	109	50	225	63	222	30	315	26	40	43	109	70	40	60	170
New Trips (North Tract)	0	16	0	16	8	18	0	26	0	0	0	0	0	0	7	7
Pass-by Trips (North Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Trips (South Tract)	0	10	0	10	2	4	0	6	0	0	0	0	0	0	4	4
Pass-by Trips (South Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	0	26	0	26	10	22	0	32	0	0	0	0	0	0	11	11
Total Pass-by Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future Traffic Volumes:	66	135	50	251	73	244	30	347	26	40	43	109	70	40	71	181

P.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	41	173	19	233	35	43	10	88	18	32	77	127	20	35	54	109
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	45	191	21	257	39	47	11	97	20	35	85	140	22	39	60	121
New Trips (North Tract)	0	35	0	35	15	36	0	51	0	0	0	0	0	0	15	15
Pass-by Trips (North Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Trips (South Tract)	0	11	0	11	7	17	0	24	0	0	0	0	0	0	5	5
Pass-by Trips (South Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	0	46	0	46	22	53	0	75	0	0	0	0	0	0	20	20
Total Pass-by Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future Traffic Volumes:	45	237	21	303	61	100	11	172	20	35	85	140	22	39	80	141

Saturday Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	97	70	27	194	29	30	16	75	47	44	91	182	16	28	35	79
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	107	77	30	214	32	33	18	83	52	49	100	201	18	31	39	88
New Trips (North Tract)	0	46	0	46	18	42	0	60	0	0	0	0	0	0	20	20
Pass-by Trips (North Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Trips (South Tract)	0	17	0	17	7	15	0	22	0	0	0	0	0	0	7	7
Pass-by Trips (South Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	0	63	0	63	25	57	0	82	0	0	0	0	0	0	27	27
Total Pass-by Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future Traffic Volumes:	107	140	30	277	57	90	18	165	52	49	100	201	18	31	66	115

15-122 Mixed Use Development-Ridgewalk Pkwy- Woodstock GA

Traffic Volumes
Future Conditions

A&R Engineering
January 2016

9 Ridgewalk Pkwy @ Main St

A.M. Peak Hour

Condition	Northbound					Southbound					Eastbound					Westbound			
	L	T	R	Tot		L	T	R	Tot		L	T	R	Tot		L	T	R	Tot
Existing:	48	152	0	200		0	319	395	714		389	0	161	550		0	0	0	0
Growth Factor (%):	2	2	2			2	2	2			2	2	2			2	2	2	
Base Condition:	53	168	0	221		0	352	436	788		429	0	178	607		0	0	0	0
New Trips (North Tract)	20	0	0	20		0	0	40	40		46	0	23	69		0	0	0	0
Pass-by Trips (North Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
New Trips (South Tract)	12	0	0	12		0	0	24	24		9	0	5	14		0	0	0	0
Pass-by Trips (South Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Total New Trips	32	0	0	32		0	0	64	64		55	0	28	83		0	0	0	0
Total Pass-by Trips	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Future Traffic Volumes:	85	168	0	253		0	352	500	852		484	0	206	690		0	0	0	0

P.M. Peak Hour

Condition	Northbound					Southbound					Eastbound					Westbound			
	L	T	R	Tot		L	T	R	Tot		L	T	R	Tot		L	T	R	Tot
Existing:	171	369	0	540		0	269	585	854		536	0	147	683		0	0	0	0
Growth Factor (%):	2	2	2			2	2	2			2	2	2			2	2	2	
Base Condition:	189	407	0	596		0	297	646	943		592	0	162	754		0	0	0	0
New Trips (North Tract)	45	0	0	45		0	0	89	89		93	0	46	139		0	0	0	0
Pass-by Trips (North Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
New Trips (South Tract)	14	0	0	14		0	0	28	28		43	0	22	65		0	0	0	0
Pass-by Trips (South Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Total New Trips	59	0	0	59		0	0	117	117		136	0	68	204		0	0	0	0
Total Pass-by Trips	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Future Traffic Volumes:	248	407	0	655		0	297	763	1060		728	0	230	958		0	0	0	0

Saturday Peak Hour

Condition	Northbound					Southbound					Eastbound					Westbound			
	L	T	R	Tot		L	T	R	Tot		L	T	R	Tot		L	T	R	Tot
Existing:	105	222	0	327		0	303	523	826		430	0	105	535		0	0	0	0
Growth Factor (%):	2	2	2			2	2	2			2	2	2			2	2	2	
Base Condition:	116	245	0	361		0	335	577	912		475	0	116	591		0	0	0	0
New Trips (North Tract)	59	0	0	59		0	0	118	118		108	0	54	162		0	0	0	0
Pass-by Trips (North Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
New Trips (South Tract)	21	0	0	21		0	0	43	43		39	0	20	59		0	0	0	0
Pass-by Trips (South Tract)	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Total New Trips	80	0	0	80		0	0	161	161		147	0	74	221		0	0	0	0
Total Pass-by Trips	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Future Traffic Volumes:	196	245	0	441		0	335	738	1073		622	0	190	812		0	0	0	0

15-122 Mixed Use Development-Ridgewalk Pkwy- Woodstock GA

Traffic Volumes
Future Conditions

A&R Engineering
January 2016

10 Ridgewalk Pkwy @ Site Drwy 1

A.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	0	0	0	0	0	0	0	0	563	0	563	0	618	0	618
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	0	0	0	0	0	0	0	0	0	622	0	622	0	682	0	682
New Trips (North Tract)	0	0	0	0	0	0	54	54	0	159	0	159	0	126	12	138
Pass-by Trips (North Tract)	0	0	0	0	0	0	10	10	0	0	0	0	0	-10	10	0
New Trips (South Tract)	0	0	12	12	0	0	0	0	0	17	80	97	0	37	0	37
Pass-by Trips (South Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	0	0	12	12	0	0	54	54	0	176	80	256	0	163	12	175
Total Pass-by Trips	0	0	0	0	0	0	10	10	0	0	0	0	0	-10	10	0
Future Traffic Volumes:	0	0	12	12	0	0	64	64	0	798	80	878	0	835	22	857

P.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	0	0	0	0	0	0	0	0	782	0	782	0	796	0	796
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	0	0	0	0	0	0	0	0	0	863	0	863	0	879	0	879
New Trips (North Tract)	0	0	0	0	0	0	109	109	0	353	0	353	0	255	26	281
Pass-by Trips (North Tract)	0	0	0	0	0	0	43	43	0	0	0	0	0	-39	39	0
New Trips (South Tract)	0	0	56	56	0	0	0	0	0	19	91	110	0	171	0	171
Pass-by Trips (South Tract)	0	0	33	33	0	0	0	0	0	-30	30	0	0	0	0	0
Total New Trips	0	0	56	56	0	0	109	109	0	372	91	463	0	426	26	452
Total Pass-by Trips	0	0	33	33	0	0	43	43	0	-30	30	0	0	-39	39	0
Future Traffic Volumes:	0	0	89	89	0	0	152	152	0	1205	121	1326	0	1266	65	1331

Saturday Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	0	0	0	0	0	0	0	0	644	0	644	0	708	0	708
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	0	0	0	0	0	0	0	0	0	711	0	711	0	782	0	782
New Trips (North Tract)	0	0	0	0	0	0	128	128	0	464	0	464	0	299	34	333
Pass-by Trips (North Tract)	0	0	0	0	0	0	59	59	0	0	0	0	0	-62	62	0
New Trips (South Tract)	0	0	51	51	0	0	0	0	0	30	139	169	0	155	0	155
Pass-by Trips (South Tract)	0	0	43	43	0	0	0	0	0	-46	46	0	0	0	0	0
Total New Trips	0	0	51	51	0	0	128	128	0	494	139	633	0	454	34	488
Total Pass-by Trips	0	0	43	43	0	0	59	59	0	-46	46	0	0	-62	62	0
Future Traffic Volumes:	0	0	94	94	0	0	187	187	0	1159	185	1344	0	1174	96	1270

15-122 Mixed Use Development-Ridgewalk Pkwy- Woodstock GA

Traffic Volumes
Future Conditions

A&R Engineering
January 2016

11 Ridgewalk Pkwy @ Site Drwy 3

A.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	0	0	0	0	0	0	0	0	557	0	557	0	470	0	470
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	0	0	0	0	0	0	0	0	0	615	0	615	0	519	0	519
New Trips (North Tract)	0	0	0	0	0	0	54	54	0	69	0	69	0	37	23	60
Pass-by Trips (North Tract)	0	0	0	0	0	0	10	10	0	0	0	0	0	-10	10	0
New Trips (South Tract)	0	0	0	0	0	0	0	0	0	14	0	14	0	37	0	37
Pass-by Trips (South Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	0	0	0	0	0	0	54	54	0	83	0	83	0	74	23	97
Total Pass-by Trips	0	0	0	0	0	0	10	10	0	0	0	0	0	-10	10	0
Future Traffic Volumes:	0	0	0	0	0	0	64	64	0	698	0	698	0	583	33	616

P.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	0	0	0	0	0	0	0	0	689	0	689	0	751	0	751
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	0	0	0	0	0	0	0	0	0	761	0	761	0	829	0	829
New Trips (North Tract)	0	0	0	0	0	0	109	109	0	139	0	139	0	83	52	135
Pass-by Trips (North Tract)	0	0	0	0	0	0	43	43	0	0	0	0	0	-39	39	0
New Trips (South Tract)	0	0	0	0	0	0	0	0	0	65	0	65	0	42	0	42
Pass-by Trips (South Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	0	0	0	0	0	0	109	109	0	204	0	204	0	125	52	177
Total Pass-by Trips	0	0	0	0	0	0	43	43	0	0	0	0	0	-39	39	0
Future Traffic Volumes:	0	0	0	0	0	0	152	152	0	965	0	965	0	915	91	1006

Saturday Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	0	0	0	0	0	0	0	0	545	0	545	0	635	0	635
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	0	0	0	0	0	0	0	0	0	602	0	602	0	701	0	701
New Trips (North Tract)	0	0	0	0	0	0	128	128	0	162	0	162	0	108	68	176
Pass-by Trips (North Tract)	0	0	0	0	0	0	59	59	0	0	0	0	0	-62	62	0
New Trips (South Tract)	0	0	0	0	0	0	0	0	0	59	0	59	0	64	0	64
Pass-by Trips (South Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	0	0	0	0	0	0	128	128	0	221	0	221	0	172	68	240
Total Pass-by Trips	0	0	0	0	0	0	59	59	0	0	0	0	0	-62	62	0
Future Traffic Volumes:	0	0	0	0	0	0	187	187	0	823	0	823	0	811	130	941

15-122 Mixed Use Development-Ridgewalk Pkwy- Woodstock GA

Traffic Volumes
Future Conditions

A&R Engineering
January 2016

12 Ridge Tr @ Site Drwy 4

A.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	237	0	237	0	95	0	95	0	0	0	0	0	0	0	0
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	0	262	0	262	0	105	0	105	0	0	0	0	0	0	0	0
New Trips (North Tract)	0	4	0	4	0	5	0	5	0	0	0	0	0	0	0	0
Pass-by Trips (North Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Trips (South Tract)	3	0	0	3	0	0	54	54	39	0	1	40	0	0	0	0
Pass-by Trips (South Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	3	4	0	7	0	5	54	59	39	0	1	40	0	0	0	0
Total Pass-by Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future Traffic Volumes:	3	266	0	269	0	110	54	164	39	0	1	40	0	0	0	0

P.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	168	0	168	0	216	0	216	0	0	0	0	0	0	0	0
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	0	185	0	185	0	238	0	238	0	0	0	0	0	0	0	0
New Trips (North Tract)	0	10	0	10	0	10	0	10	0	0	0	0	0	0	0	0
Pass-by Trips (North Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Trips (South Tract)	3	0	0	3	0	0	61	61	180	0	5	185	0	0	0	0
Pass-by Trips (South Tract)	7	-7	0	0	0	-8	38	30	41	0	8	49	0	0	0	0
Total New Trips	3	10	0	13	0	10	61	71	180	0	5	185	0	0	0	0
Total Pass-by Trips	7	-7	0	0	0	-8	38	30	41	0	8	49	0	0	0	0
Future Traffic Volumes:	10	188	0	198	0	240	99	339	221	0	13	234	0	0	0	0

Saturday Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	153	0	153	0	179	0	179	0	0	0	0	0	0	0	0
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
Base Condition:	0	169	0	169	0	198	0	198	0	0	0	0	0	0	0	0
New Trips (North Tract)	0	13	0	13	0	12	0	12	0	0	0	0	0	0	0	0
Pass-by Trips (North Tract)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Trips (South Tract)	5	0	0	5	0	0	94	94	163	0	4	167	0	0	0	0
Pass-by Trips (South Tract)	11	-11	0	0	0	-13	65	52	57	0	12	69	0	0	0	0
Total New Trips	5	13	0	18	0	12	94	106	163	0	4	167	0	0	0	0
Total Pass-by Trips	11	-11	0	0	0	-13	65	52	57	0	12	69	0	0	0	0
Future Traffic Volumes:	16	171	0	187	0	197	159	356	220	0	16	236	0	0	0	0